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JPRS Report

Nuclear Developments

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Nuclear Developments

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SOUTH AFRICA

Commission Purchases Land For Nuclear Station

*MB2711164189 Johannesburg SAPA in English
1613 GMT 27 Nov 89*

Johannesburg, Nov 27 (SAPA)—ESKOM [Electricity Supply Commission] has bought more than two-thirds of the land in the Cape St. Francis-Oyster Bay area which has been ear-marked as a site for development of a nuclear power station, SABC [South African Broadcasting Corporation] radio news reports.

This was disclosed on Monday by an ESKOM official who said the organization had already purchased more than 1,000 hectares of the required land and was negotiating to obtain another 450 hectares.

The spokesman stressed that acquisition of the site did not necessarily mean that South Africa's next nuclear power station would be built in the Eastern Cape.

He said the property was being purchased to ensure that a suitable site is available when needed.

PLA Develops Large Nuclear Test Device

*HK2712040689 Beijing ZHONGGUO XINWEN SHE
in Chinese 0944 GMT 14 Dec 89*

[Text] Beijing, 14 Dec (ZHONGGUO XINWEN SHE)—A large test device which simulates the shock waves caused by nuclear explosions—"Anti-Shock Wave Tube 1485"—was successfully developed by a unit of the People's Liberation Army.

In order to achieve all kinds of data about the damages caused by the shock waves of a nuclear explosion to military facilities, it is necessary to create huge instantaneous shock waves by some artificial means. The research institutes concerned studied the methods of high-pressure electric discharges, explosions through the mixture of hydrogen and oxygen, and cone-shaped dynamite. Finally, they selected a kind of small-density gunpowder as the energy sources for creating the shock waves.

The test device was built in Luoyang, Henan. It is 42 meters long, 1,485 millimeters in diameter, and weighs 340 tons. It winds across the land like a huge dragon. It is the largest among similar devices in Asia.

The shock waves created by this device are similar to those caused by nuclear explosions, thus much test data can be obtained through its operation. The successful development of such a device enabled China to rank among the small number of advanced countries in the world which possess large anti-shock wave tubes. While nuclear explosions for test purposes are subject to more and more restrictions, the simulating test devices will have more extensive use.

Since the device was put into use, some 30 to 40 large test simulations have been carried out to test the shock strength of some defense works, some construction projects, and some weapons. Accurate results were achieved in these tests. In the test simulations for a large

underground project, more than 2,000 bits of data were achieved through testing 14 different slope models. This provides the foundation for studying the impact of the shock waves on different parts of hills and valleys and for rationalizing the distribution of the underground structures. In particular, the tests achieved a more accurate empirical formula for calculating the relationship between the pressure and the topographical features, and this can be more effectively used in the relevant engineering projects.

China May Supply Nuclear Plant to Pakistan

*OW2112123789 Beijing XINHUA in English
0857 GMT 21 Dec 89*

[Text] Islamabad, December 21 (XINHUA)—Pakistan Prime Minister Benazir Bhutto has approved plans for six additional atomic power plants in the country to cope with serious energy crisis.

The government is now seriously considering to install atomic power plants in the country for getting rid of the menace of hours-long load-shedding, a senior official said here Thursday.

The proposed six nuclear power plants could produce 2,400 mw electricity. Pakistan is facing one billion U.S. dollars GNP loss every year due to energy crisis.

The government is presently negotiating with France, China and the Soviet Union for getting these power plants, he added.

The electricity through atomic power plants is not only cheaper as compared to the hydro and thermal, but it would also reduce the danger of environmental pollution, experts here said.

A high level delegation would soon leave for China for negotiations with the concerned authorities in this respect. On the arrival of French Prime Minister early next year, the matter of atomic power plant would be discussed with him, the same official said.

JAPAN

LDP Decides on Escort for Plutonium Shipment

OW1912075689 Tokyo KYODO in English 0658 GMT 19 Dec 89

[Text] Tokyo, Dec. 19 KYODO—The Japanese Government decided Tuesday not to use a Maritime Self-Defense Force [SDF] ship to escort plutonium from Europe. The government will instead use a Maritime Safety Agency (MSA) ship yet to be constructed.

The decision resolves a dispute that reportedly split the ruling Liberal Democratic Party's [LDP] parliamentary wing between those who believed the Defence Agency ship should be used and members who feared the use of the navy could create controversy over the role of the Self-Defense Forces (SDF).

Japan's Constitution renounces the right to use force to resolve international disputes, but its application to dispatching Self-Defense Forces overseas has not been clearly defined. Parliamentarians who favor the use of the Self-Defense Forces have said they fear Japan would be criticized for not exercising its full defense capabilities in the case of a hijacking.

Government spokesman Nobuo Ishihara said the dispatch of the SDF overseas would not violate Japan law but he said the participants had agreed the MSA would provide adequate protection.

"The principle role of the Maritime Safety Agency is to prevent and quell crimes at sea," concerned cabinet members and executives of the ruling Liberal Democratic Party said in a statement issued after a meeting arranged to hammer out a compromise between the government and the LDP. A government official said the decision avoided a legal debate that could have caused friction with neighboring countries, still sensitive about Japan's military ambitions 45 years after the end of World War II.

"I don't know the real intention of some parliamentarians, but this is not something we have to discuss at this time," said the official, who asked for anonymity.

According to Japanese law the Defense Agency chief may dispatch military forces at sea if he has a special reason but he must first obtain permission from the prime minister.

SOUTH KOREA

Utility Permitted To Build Nuclear Plants

SK2112024689 Seoul YONHAP in English 0137 GMT 21 Dec 89

[Text] Seoul, Dec. 21 (YONHAP)—The government has given the Korea Electric Power Corp. approval to build two nuclear power plants in Youngkwang, South Cholla Province.

The atomic energy committee gave the go-ahead Wednesday for construction of the No. 3 and No. 4 reactors in Youngkwang after concluding that their design meets South Korean safety requirements. But the committee, headed by Deputy Prime Minister Cho Sun, told the utility company to take additional steps to improve safety at the nuclear plants and evaluate the impact of their construction on the environment. The new units will have a power generation capacity of 1 million kilowatts each.

Local residents and some dissident organizations oppose construction of the plants for safety reasons. Work will be completed by March 1995 for No. 3 unit and March 1996 for No. 4 at a total cost of 3.32 trillion won (5 billion U.S. dollars).

The committee also approved a candu-type nuclear reactor for the No. 2 atomic plant in Wolsong, North Kyongsang Province. The 700,000 kilowatt Wolsong plant will be completed by June 1997, according to a committee official.

BULGARIA

Safety, Value of Belene Nuclear Plant Discussed*AU0301190090 Sofia RABOTNICHESKO DELO
in Bulgarian 2 Jan 90 p 3*

[Liliya Lecheva article: "Before We Say Whether the Belene Nuclear Power Plant Is Necessary"]

[Excerpts] So far we have been building the Belene Nuclear Power Plant unofficially, with fleeting reports, with no information from the specialists, and with no government document approving the construction of this installation.

It is now already an official fact that in Bulgaria public disapproval is growing toward the project. Yet the report called for by the Ministry of the Energy Industry to substantiate the Second Nuclear Power Plant project was prepared by "Energoproekt" 10 years ago. If during this period, following the necessary discussion, the course of our economy was set toward the purchase (and design!) of energy-saving technologies, toward a new economic structure, then the first results should already be evident today. However, we are moving precisely in the reverse direction: We are making maximum expenditures and then building huge power plants. At present, most of the energy specialists are trying to make us agree that the Belene Nuclear Power Plant, with its planned four 1,000-megawatt generating units, is essential for Bulgaria, given that 58.9 percent of the country's gross electric power consumption relates to industry, against 32.6 percent for the communal and domestic sector (according to 1988 data), that every year 120,000 new consumers are connected to the network, and that Bulgaria, as is well known, is poor in water resources and possesses barely 30 percent of its required primary energy resources. This means an outflow of foreign currency to buy the coal, petroleum, and gas used in electricity production.

Studies by "Energoproekt" show that Bulgaria's electric power consumption in 1995 will require the connection of a new 1,000-megawatt unit to the energy system, when the No. 5 and No. 6 units at the Kozloduy Nuclear Power Plant will already be operating at full capacity. The expected gross electric power consumption in 1995 is 61 billion kilowatt-hours, compared to 49 billion in 1988.

However, this data is valid for the present structure of the economy. It is certain that it will not be the same in 6 years' time. Is the evaluation of the expected electric power consumption accurate then?

According to Professor Nikola Todoriev, chairman of the "Energy Industry" Association, in 1995 it will be too late to start up a new 1,000-megawatt unit. He states that the problem lies not so much in the quantity of electric power spread over the year as in the shortage of capacities at peak periods. [passage omitted]

We will spend more than 7 billion leva on building the four generating units at Belene (according to the 1987 general estimate). The reactor section of the No. 1 unit has already been built up to a level of 13.20 meters, and 620 million leva have been invested in it, of which 400 million leva were for construction and installation work on the installation's infrastructure and foundation. In addition, 1,400 decares of farmland and 600 decares of forest have been destroyed.

For this money one might expect that we would be provided with the very safest and most up-to-date installation. However, the question of safety gives rise to serious hesitations.

I will start with the Kozloduy Nuclear Power Plant, because the first Bulgarian nuclear plant was not designed for earthquakes, nor were its four small 440-megawatt units guaranteed against earthquakes. They are now being reinforced. However, they withstood three tremors: a strong earthquake at Vrancha in 1977, a tremor of one-half the strength at Strazhitsa in 1986, and a tremor of one-quarter the strength of the first earthquake 10 km from Kozloduy in 1987.

The region around Belene has a seismic activity of 7.5, according to the 12-point Medvedev-Shponheuer-Karnik scale, that is, twice as high as the Kozloduy region. Why then build the nuclear plant here? First of all, the only non-seismic region in Bulgaria is in north-western Bulgaria near Vidin, while all other regions are subject to earthquakes. [passage omitted]

What has been done at Belene to date? Earthwork in order to raise the level of the site has been completed that is valued at 70 million leva. Weak soils have been removed between the 21- and 10-meter levels in order to reach the bedrock. A strong ballast-bearing pad has been built up. In the view of engineer Kosyo Kosev from "Energoproekt," the chief designer for the plant, this is a firm foundation for the construction of the reactor section and the machine hall. He even maintains that this is the best possible and most promising foundation. However, what has been missed? Let us return to Kozloduy, because the problem dates from an earlier time. The International Atomic Energy Agency recommends a number of anti-earthquake systems. The first is a seismological one, with four recording stations located at distances between 15 and 30 km from the power plant, which are designed to determine the epicenters of weak tremors occurring in the immediate vicinity of the plant or further away. No such system has been constructed at Kozloduy (let us not forget how surprised the scientists were at the earthquake here 2 years ago!). No such system has been designed at Belene.

The second system is installed within the power plant. In the event of a tremor it emits a signal, at which time the reactors shut down automatically. This system shut down the reactors in 1986. The third system consists of

instruments below ground and on the surface that register the reliability of the plant during weak or medium-strength earth tremors and forecast its behavior during a strong tremor. It has not been constructed at Kozloduy. The fourth system is installed on the machine that loads the reactors. It is fitted on the No. 5 unit at Kozloduy, but the four smaller units are loaded under manual control.

The design team of senior scientific fellow Sachanski submitted a project 4-5 years ago for monitoring deformations of the ground, slips, and so on. The project has not yet "reached" Belene. All this means one thing: underestimation of the danger!

Our specialists are convinced that they can protect the Belene plant against the level of seismicity proved 6 years ago. However, in order to provide a further guarantee, the Committee on the Use of Nuclear Energy for Peaceful Purposes under the Council of Ministers has submitted a proposal to the government for a repeat examination to be carried out by independent experts. Under the pretext that it was not clear how much this would cost, it was explained to the committee that it was possible that no decision would be reached on this. It was added that it would therefore be better not to make any comment on this fact. Are there still people in the government even now who think like this?

The second fact that will amaze even the most unprejudiced person is that we are building the Belene plant to meet the "contemporary" standard of 1969!

Following Chernobyl, the nuclear energy industry quickly made an impact upon people. Its problems, formerly regarded as technological, suddenly became ethical ones. In this context, let us therefore ask our specialists: Is it normal (and ethical) for us to build a modern and safe nuclear plant according to designs dating from 1969? When the plant comes into operation, its generating units will be ready for the scrapyard. [passage omitted]

The most expedient solution for this problem is for us to wait, if we can, for 3 or 4 years until reactors of a more advanced type become available, and then continue with the construction of the No. 3 and 4 units at Belene using such reactors—this is the view of Boris Georgiev, deputy chairman of the Committee on the Use of Nuclear Energy for Peaceful Purposes.

Yes, the opinion prevails among the energy experts that all of the four units to be constructed at Belene are absolutely essential and are the most suitable ones for Bulgarian seismic conditions. However, there also exists a view that some of these units should be installed at Kozloduy instead of Belene. Voices are also heard suggesting that units of smaller capacity should be used, because these are more suitable and cheaper. The opponents of this proposal try to prove that the small units,

such as the 440-megawatt ones in Hungary and the 465- and 735-megawatt ones in Finland, are designed for a lower seismic level, and therefore cannot be used in Bulgaria. [passage omitted]

A very important issue for our economy is the actual cost of nuclear-produced electric power, given that nuclear generating units are so expensive and that it will take almost 3 decades of production to recoup their cost. Let us make a comparison.

This year the average production costs of 1 kilowatt of electricity for various generating plants is as follows:

—For the "Trakiya," "Ruse-West," and "Sofia" thermal power plants, fired with fuel oil and gas, the average cost is 3.39 stotinki.

—For the "Dimo Dichev" thermal plant, using locally produced coal, the cost is 4.36 stotinki (without removal of sulfur compounds which, when introduced, will increase the cost to 4.94 stotinki).

—For hydroelectric power plants, the average cost is 4.5 stotinki.

—The cost for the No. 5 generating unit at Kozloduy is 2.75 stotinki, while the overall cost for the first four 440-megawatt units is 1.46 stotinki (they have already paid for themselves).

—In the case of the Belene Nuclear Power Plant, it is expected that the prime cost of 1 kilowatt-hour of electric power will be 3.09 stotinki in 1994, that is, immediately following the startup of the first generating unit.

—U.S. data indicates costs of 5 cents per kilowatt-hour, while Soviet data gives a figure of 1.04 kopeks. [passage omitted]

However, in present-day conditions, ecological considerations are regarded as equal to economic ones, and one has to know to what extent the process of producing electricity from the atom passes the ecological test, as compared with the other sources. The specialists prove the great harm produced by waste discharges from the combustion of petroleum and coal, point to the immense clouds of smoke billowing from the stacks of the thermal power plants, and stress the unfavorable effects of hydroelectric power on the environment. At the same time, the arguments concerning the "more ecological and safer" production of electricity from nuclear sources must give way before the fact that if we build a 6,000-megawatt plant, we will be on the verge of radiation contamination.

It is clear that the energy experts have made their decision to build the Belene Nuclear Power Plant. However, something else is also clear from the assembled information, namely that at this stage the specialists have not guaranteed all the essential conditions to make us feel safe in the company of yet another nuclear power plant. Since the impossible has not been accomplished in

order to guarantee "the atom's" quality, at whose expense then are we building the plant? [passage omitted]

It is self-evident that this article cannot exhaustively cover all the issues posed by the construction of a nuclear power plant, nor can these issues be examined in their full depth. However, it is the task of the journalist to raise these issues for public attention and to open the pages of the newspaper for discussion.

Multiparty Appeal Against Belene Nuclear Plant

*AU2912104989 Sofia Domestic Service in Bulgarian
1000 GMT 29 Dec 89*

[Text] We have received the following appeal from Svishtov [town on the Danube in northern Bulgaria], addressed to the chairman of the Council of Ministers:

From: Ecoglasnost Association, Svishtov; Municipal Committee on Environmental Protection and Regeneration; Municipal Committee of the Bulgarian Communist Party; Municipal People's Council; Municipal Komsomol Committee; Municipal Fatherland Front Committee; Municipal Trade Union Council; and Independent Student Movement at Svishtov's Higher Financial-Accounting Institute.

After the submission of a petition signed by 10,681 citizens of Svishtov to the National Assembly, the construction of the Belene Nuclear Power Plant continues at an accelerated pace. Huge quantities of concrete are being cast. Urgent construction-assembly activities are being carried on in the basic nuclear department of the plant.

The citizens of Svishtov are alarmed. We think that the purpose of all this is to prove, at great cost, that stopping the construction of the nuclear power plant would be unprofitable from an economic point of view. The purpose is to present an accomplished fact to the government, the National Assembly, and the public. The purpose is to bring the opponents of this construction project to their knees.

We assess this behavior, based on power, as a remnant of the Stalin-Zhivkov time, and as an expression of narrow departmental attitude rather than a statesmanlike attitude. It is an irresponsible waste of thousands and millions of leva, which comes from the taxes paid by citizens throughout the country.

We insist that the construction of the Belene Nuclear Power Plant be frozen until a final decision is adopted.

We propose that the final decision only be adopted after conducting a nationwide referendum on issues of nuclear power supply, and more specifically, on the expediency of constructing the nuclear power plant at this location.

Listen to our voice! Do not become a partner in this inhuman cause! The life of even a single person is more precious than all millions (?buried) in the Belene Nuclear Power Plant.

Protesters Demonstrate Against Belene Reactor

*AU0701201890 Sofia BTA in English
1924 GMT 7 Jan 90*

[Text] Sofia, January 7 (BTA)—Citizens from Pleven, Svishtov, Veliko Turnovo and Sofia and a group for protection against nuclear accidents from Kozloduy gathered at the construction site of the second Bulgarian nuclear power-generation plant in Belene to express their concern over the construction of this project. They carried posters on which it was written "The World Said Goodbye to Hiroshima, Bulgaria is Drifting Towards Chernobyl," "We Don't Want Gas Masks to Become Part of Our Everyday Clothes," "Green Policy Requires Mature Government."

The speakers who took the floor at the rally demanded that the construction of the nuclear power-generation plant in this seismic region should be stopped and that the operation of the plant in Kozloduy should be more efficiently controlled.

The participants in the rally presented to the representative of the nuclear power-generation plant in Belene, Mr Nikita Nabatov, an address to the workers on the site in which they assure them that the demand for discontinuing the construction is not directed at them, but is made to protect people's life and nature.

Conference Held on Chernobyl Pollution

*AU2112104289 Sofia Domestic Service
in Bulgarian 1830 GMT 20 Dec 89*

[Text] A conference opened in Sofia today on radiation protection problems and the results of the pollution caused by Chernobyl in Bulgaria.

Those taking part included specialists from the Council of Ministers' Committee for Science and Higher Education, the Academy of Military Medicine and the National Scientific Program for Radiation Protection.

Data was presented that had been prepared at the end of last year by the UN Scientific Committee on the Effects of Nuclear Radiation, according to which Bulgaria occupied the first position with regard to the highest degree of contamination with [word indistinct] radionuclides. This relates to the equivalent dose created by the iodine-130 content in the thyroid gland of [word indistinct].

In a frank dialogue, the specialists proved that, despite the warnings and views expressed concerning the creation of effective radiation protection following the accident, the Government Commission for Combating Natural Disasters and Major Industrial Accidents failed to take measures to overcome the situation and misinformed the public.

Despite the numerous proposals made by the specialists from the Agricultural Academy that highly contaminated animal feed should be destroyed, this was not done, which led to a secondary radiation peak in the contents of food products, such as meat, milk, and meat and dairy products. As a result of this, the accumulation of radiation among the population also increased quickly, especially in southern Bulgaria.

Despite the assurances of Professor Lyubomir Shindarov, first deputy minister of public health, the food products in Bulgaria were naturally contaminated with harmful radioactive contents. The only exceptions were certain products intended for export and for the government.

The conference will continue tomorrow.

GERMAN DEMOCRATIC REPUBLIC

Nuclear Waste Disposal Site Opened to Media

AU2012092989 East Berlin NEUES DEUTSCHLAND
in German 15 Dec 89 p 2

[ADN/ND report: "Radioactive Waste Securely Stored Near Morsleben"]

[Text] Haldensleben (ADN/ND)—The area of the final storage site for radioactive waste in Morsleben, Magdeburg Bezirk [area], has lost its status as "terra incognita" for the public. Journalists were able to convince themselves of the secure storage of waste products with low- and medium-level radioactivity in the former salt mine near the border. Most of the waste comes from the "Bruno Leuschner" Nuclear Power Plants Combine and comprises solid and liquid substances, such as cleaning water, air filters, used instruments from inside the reactor, and protective clothing. About 20 percent of the deliveries are radionuclides from medicine and research. Radioactive waste from abroad is not stored in Morsleben.

"We assume that this radioactive waste will lose its radioactivity in a maximum of 1,000 years," enterprise director Klaus Ebel explained. He reported that the salt mine has been used as a final storage site since 1978, and that as a deep storage site it even exceeds the international safety recommendations.

Hartmut Schulze, who is responsible for radiation protection, stated that the radioactive pollution is far below the given thresholds. The environment and the population are not in danger.

Highly radioactive waste, such as nuclear fuel, is not stored in Morsleben. After several years of being intermediately stored in the nuclear power plants, this fuel is sent back to the Soviet Union. The interlocutors stressed that there are no files of the former State Security Service in the salt mines, as rumors have had it.

POLAND

Zarnowiec Nuclear Plant Construction Halted

LD2312184789 Warsaw PAP in English
1654 GMT 23 Dec 89

[Text] Warsaw, Dec 23—After a long discussion last night, the council of ministers, in face of the difficult economic situation in the country, resolved to discontinue the construction of the nuclear plant in Zarnowiec in 1990.

The next year will however see a social discussion on the matter as the final decision whether to continue the construction and what to do with the nuclear power industry in Poland in the future must take into account society's opinion. The Council of Ministers will also start intensive work on a programme of power industry development in Poland.

The meeting accepted cabinet's decree on changes in the income equalizing tax, with the average monthly pay amounting to 775,000 zlotys in 1990. Incomes of 16 million zlotys per year will be free from tax. The tax cannot be higher than 40 per cent of the tax base. The Council of Ministers also adopted draft amendments to the law on hard coal communities. The document is to provide legal and organizational foundations for the necessary reforms in the hard coal industry.

ROMANIA

Commission for Control of Nuclear Activities

AU0801193790 Bucharest Domestic Service
in Romanian 1800 GMT 8 Jan 90

[Text] Decree regarding the establishment of the National Commission for the Control of Nuclear Activities:

The Council of the National Salvation Front [NSF] decrees:

Article 1. The National Commission for the Control of Nuclear Activities is established by taking over the entire assets and liabilities of the State Inspectorate for the Control of Nuclear Activities and Nuclear Quality.

Article 2. Molariu Stefan Alexandru is appointed President of the National Commission for the Control of Nuclear Activities with the rank of Minister Secretary of State. Signed by the President of the NSF Council, Ion Iliescu.

YUGOSLAVIA

Second Quake Hits Krsko Nuclear Power Plant

*LD3012150289 Belgrade TANJUG in English
1426 GMT 30 Dec 89*

[Text] Ljubljana, Dec 30 (TANJUG)—A new earthquake registering four degrees on the Mercalli Scale shook Krsko Polje (an area in north-western Yugoslavia)

at about 06:00 local time (0700 GMT) this morning, but Yugoslavia's only nuclear power plant, Krsko, was not shut down.

Krsko, said to be capable of withstanding shocks caused by a force-ten tremor, is operating normally today.

The plant was shut down on Thursday following the first quake, but resumed operation yesterday after an investigation revealed no sign of damage.

ARGENTINA

Menem Against Signing Nonproliferation Treaty

PY2411211089 Buenos Aires BUENOS AIRES
HERALD in English 24 Nov 89 p 11

[Excerpt] President Carlos Menem made it clear yesterday that "Argentina will not sign the Tlatelolco nuclear nonproliferation treaty because it would go against the development of nuclear energy for peaceful purposes that we have managed to build up over the years with considerable effort."

In statements published yesterday by the local magazine ARGENTINA NUCLEAR, the head of state recalled that the Justicialist platform for the May 14 elections pointed out "Argentina's traditional attitude of not changing national policies as long as the important questions behind them remained unchanged."

Menem expressed his willingness to promote the export of high technology, "taking into account the general interest of generating a flow of financial support from production to overcome the current crisis." [passage omitted]

PERU

Prospects for Uranium Mining in Puno

51002063 Lima EL COMERCIO in Spanish
5 Nov 89 p D3

[Text] Puno's potential uranium deposits could convert the region into a major Andean center for development, according to engineer Jorge Ticona Mori. The Puno expert maintained that evidence in volcanic rocks from the tertiary period found in a 600-square-km area in the Mucusani district (Carabaya province) indicates there

may exist up to 50,000 metric tons of uranium deposits. Ticona explained that the Peruvian Institute of Nuclear Energy (IPEN) has reached these conclusions after many years of surveys and exploration in certain areas of the country.

The exploitation of uranium in Peru is profitable from a mining point of view, Ticona stated. The fact that the world market supply of this metal is low, he continued, would make Peru competitive with the best mines existing in the developing world. Elaborating on this point, Ticona said that Peru's advantage lies in the fact that the Mucusani deposits are of high quality and exploitable at a low cost.

He pointed out that there is also a 5,000-kg uranium deposit in the Chapi zone, adding that the construction of a pilot plant for producing yellowcake is being planned in this area which will facilitate studies into the feasibility of building a unit capable of producing 300 tons of this mineral a year. He revealed that the National Atomic Energy Commission of Argentina will provide the infrastructure and necessary assistance in accordance with a cooperative agreement recently signed by the governments of Lima and Buenos Aires.

Ticona stated that, in the meantime, exploration continues and initial steps have been taken to obtain representative samples of the metal. He mentioned that the world market was saturated at this time but that prices were expected to increase soon. Moreover, the use of uranium as a source of electricity in industrialized countries will assure the profitability of the metal. He explained that both Japan and France have shown interest in participating in all phases of uranium exploitation in our country, from its exploration to the production of nuclear energy.

He ended by stating that it is his understanding that IPEN is planning to install a nuclear fuel plant in Arequipa, currently the country's center of development.

AFGHANISTAN

Soviets Send Scuds, Other Weapons

BK0901113890 Hong Kong AFP in English 1119 GMT
9 Jan 90

[Text] Islamabad, Jan 9 (AFP)—Major shipments of tanks, artillery and missiles from the Soviet Union have reached the Kabul regime over the past three months, Western diplomats said here Tuesday [9 January]. Thirty missile launchers, 165 tanks, 240 other armoured vehicles and 125 artillery pieces had been delivered, they said. Moscow had also dispatched 470 trucks laden with supplies during the October to December period, the sources said.

The diplomats said T-54, T-55 and T-62 tanks had reached Kabul government forces and 22 ground-to-ground Soviet-made Scud missiles, flown to Afghanistan "recently", had been deployed at launch sites at Dar ol-Aman in the capital between December 21-28.

Scud missiles carry a 700 kilo (1,500 pound) charge up to 300 kilometres (186 miles) and over 1,000 of them have been fired by Kabul forces in their war against mujahidin rebels which has escalated since the Soviet troop withdrawal was completed in February last year.

The diplomats said they were unable to confirm reports on the mujahidin news agency MIDIA [MEDIA INFORMATION DEPARTMENT OF ISLAMIC AFGHANISTAN] on Monday that the Kabul regime had "recently" received two Soviet MiG-29 warplanes. MIDIA, citing "reliable Kabul sources", said the Soviet Union had also decided to deliver a dozen Antonov 12 transport planes.

EGYPT

Israel-South Africa Nuclear Cooperation Viewed

90OA0103A Cairo AKHIR SA'AH in Arabic
1 Nov 89 pp 3-6

[Article by Muhammad Wadji Qandil: "Israel, Nuclear Missiles, and the Secret of the Deal With South Africa: What Lies Behind Pentagon and U.S. Intelligence Reports? Secrets of the Nuclear Arsenal in Israel and South Africa"]

[Excerpts] [Passage omitted] The real cause for the fears and misgivings which erupted when the secret deal between Israel and South Africa came out in the open is the fact that this matter has to do with Israel's and Pretoria's nuclear arsenals, both of which represent unlimited dangers for Arabs and for Africa. [passage omitted]

Israeli technicians, approximately 75 engineers, have also been working for years at the Overberg testing area near Pretoria. There is an assembly plant in that area which was built in accordance with the Israeli model so

that Israel and South Africa can use it to manufacture long range missiles which can carry nuclear warheads. [passage omitted]

This does not mean that Arab countries should rush into a heated race, whose consequences would be unreliable, to acquire a deterrent nuclear capability to counter the Israeli threat. Nor does it mean that Arab countries should waste their capabilities and resources and set off another drain on their resources to enter into a race with Israel and South Africa for total destruction. Governments which can afford a nuclear capability should not rush into deals to purchase missiles and nuclear warheads. [passage omitted]

As I indicated earlier in my warning, it is essential and necessary that we pay close attention to what is happening so that we can mobilize an international position that would apply pressure on Israel and South Africa to rid the area and the continent of nuclear weapons. This must be done so that the threat of assured destruction can be moved out of the continent.

Egypt refuses to become involved in the nuclear arms race because it would unleash unforeseen suffering into the area and would lead to destruction and death even as the area strives to get rid of destructive nuclear weapons and missiles.

There is no doubt that the mere fact that Israel, with South Africa's assistance, has nuclear weapons in its possession implies a standing threat to Arab national security. Such a threat would be a factor when Israeli decisions are being made, and no one can control the circumstances and the factors that would have an effect on those decisions. Who can guarantee that in using a nuclear deterrent, power will not be foolish and arrogant?

Although the United States had asked Israel to sign the Nuclear Non-Proliferation Treaty after receiving information about the secret cooperation between Israel and South Africa, the U.S. administration did not follow up regularly on this matter. Consequently, Israel turned a deaf ear to American protests, and it refused to sign the treaty. Israel refused to allow inspection of the Dimona reactor even though it knows that the United States opposes the transfer of technology and the production of nuclear weapons.

This means that Washington has known about this matter for years. It means that the United States and Israel have had their differences on this matter.

Why then was this question brought out in the open at this time? Why were details about the nuclear cooperation between Israel and South Africa leaked by U.S. intelligence and the Pentagon? Why has the fallout from the American report been so widespread? [passage omitted]

Washington undoubtedly has known a great deal about Israel's nuclear activity and about its cooperation with

South Africa since the days of the Reagan administration. And yet, Washington has been silent since last January when news about the secret cooperation between Israel and South Africa was confirmed.

It seems there are strong factors behind the fact that this issue was unexpectedly brought out in the open:

1. It seems that President Bush's administration is starting to lose patience with Israel's intransigence—the intransigence of Yitzhak Shamir—and with Israel's rejection of Baker's 5-Point Plan. Accordingly, the Bush administration finds itself hard pressed with regard to the Middle East problem and peace efforts in the region. That is why it is using another approach to embarrass Israel and put it in a dilemma by bringing the question of Israel's nuclear cooperation with South Africa out in the open. This is especially critical for Israel because its cooperation with South Africa conflicts with the strategic cooperation agreement it has with the United States, and that makes Israel vulnerable to a suspension of the military assistance it receives from the United States. [passage omitted]

2. It seems that Israel's nuclear activity, especially in the military field, has gone beyond legitimate bounds. Given what is being said about Israel becoming the sixth nuclear power in the world, Israel's nuclear activity is a threat to security and stability in the region. Because this situation opens the door to a nuclear arms race in a volatile region that is likely to explode, the United States wants to curb possibilities for competition between the Arab countries and Israel for the acquisition of advanced missile technology. There is information that what Israel is trying to get from its cooperation deal with South Africa is the capability to build ICBM's which can carry hydrogen bombs, not just limited nuclear warheads. This means that while the two superpowers, the United States and the Soviet Union, have agreed to limit their nuclear weapons, a third power that is beyond control and authority and has the capability of destroying the world has entered into the picture.

3. According to CIA information, it seems that Israel leaked U.S. technological secrets about manufacturing long range missiles to South Africa, and that puts U.S. national security in jeopardy. Attempts have been made by Israeli agents to penetrate the Pentagon and commit espionage to obtain technology. There is, for example, the case of the spy Pollard, and there are other cases as well. There are misgivings in Washington about the extent to which the U.S. nuclear arsenal has been compromised and the extent to which American security has been penetrated by Israel's agents.

4. Given Israel's and South Africa's joint 1979 experiment to detonate a nuclear device in the Indian Ocean, it seems that military cooperation between the two countries, especially in the area of missiles carrying nuclear warheads, has reached a dangerous level. Recently, an experiment involving a long range missile was conducted on an island in the Indian Ocean. [passage omitted]

5. It seems that the United States under the Bush administration is revising its policy on the proliferation of nuclear weapons. It seems this policy is being revised after the question of nuclear cooperation between Israel and South Africa came out in the open and after it became known that Israel and South Africa had agreed on a deal to produce long range nuclear missiles and a fighter airplane that relies on U.S. technology available to Israel. In return Israel would receive high grade enriched uranium from South Africa. That could lead the United States to reconsider its deal to sell Israel a super computer which is used in manufacturing missiles. Israel wants to purchase that computer under the terms of its strategic cooperation agreement with the United States. [passage omitted]

That is why we must pay close attention to what is happening behind the wall of silence in the Negev desert nearby and in the Kalahari desert far away. We must pause to warn against the nuclear threat that lies within Israel and South Africa, two similar countries that are bound together by the threat they pose and by the fact that both are beyond international authority and control.

As far as Israel is concerned, the question is no longer whether or not Israel has the capability to manufacture a nuclear weapon or whether it has actually manufactured such a weapon! The information which has been confirmed goes beyond such uncertainty and speculation. The question now is this: Does Israel admit having such a weapon, or is it maintaining its ambiguous position so it would not be subject to the nuclear weapons treaty and to international inspection?

Reliable reports indicate that in 1986 Israel continued to build an arsenal of nuclear bombs, which could be delivered by airplanes. These reports, which indicate that Israel has been manufacturing nuclear bombs at the rate of one or two a year, show that Israel's nuclear arsenal at the earth, contains between 20 and 25 bombs of the same size as the Nagasaki bomb. [passage omitted]

That is why Yitzhak Rabin, Israel's defense minister, commented on the controversy by saying, "We will not discuss our missiles program under any circumstances." At the same time Shamir was careful to deny the report by the American television network.

There is information, however, that Gen Regev, senior aide to Rabin, is in South Africa supervising the nuclear weapons project from the Israeli Embassy in Pretoria. [passage omitted]

What can this sequence of reliable information about the new nuclear alliance between Israel and South Africa tell us?

Briefly, this information tells us that Israel relies now on South Africa to supply it with the enriched uranium it needs to manufacture nuclear warheads. The information tells us that since Israel itself lacks the territorial depth and the space that would be large enough and necessary for conducting tests on long range missiles, it

has found a remote, inconspicuous spot in the southern part of the the continent where it can conduct those tests.

Can there be anything more dangerous to Arab and African countries and their security than such a nuclear alliance that extends from Israel in the north to South Africa? Can there be anything more threatening to Arab national security than the presence of a deterrent nuclear weapon in the hands of a power which operates beyond international authority and supervision?

This may be the reason why we must pay close attention and remain vigilant to what is going on under the surface of the earth and behind the conspiracy of silence in the Negev desert and in the Kalahari desert. Had it not been for the United States, Israel's strategic ally, the terrifying secret would not have been exposed and the fallout from it would not have become so widespread.

Foreign Minister Warns Against Nuclear Arms Race

NC2812204289 Cairo MENA in Arabic
1935 GMT 28 Dec 89

[Excerpts] Alexandria, 28 Dec (MENA)—Dr 'Ismat 'Abd-al-Majid, deputy prime minister and foreign minister, has stressed the need for an Israeli stand similar to the peaceful and positive Palestinian course so that an impetus may be given to the peace process. He said that Egypt is seeking to prepare the right atmosphere for a Palestinian-Israeli dialogue on the substance of a peaceful settlement.

In a speech he delivered tonight during his meeting with Alexandria University staff, Dr 'Abd-al-Majid said that the Palestinian side has recently succeeded in developing its stand in a positive manner. [passage omitted]

Dr 'Abd-al-Majid went on to say that, on the basis of its overall outlook on peace, Egypt is seeking to keep the Middle East region out of the nuclear arms race. He stressed that Egypt "cannot agree to live with a sword held over its head by any regional party."

At this point he noted the need for all the parties concerned to take the necessary practical and swift measures to implement the proposal to establish a nuclear-free zone in the Middle East, jointly to desist from producing, obtaining, or possessing nuclear weapons or from allowing a third party to deploy nuclear weapons on their territories, and to agree to have all their nuclear facilities subjected to the guarantees of the International Atomic Energy Agency. [passage omitted]

Missile Cooperation With North Korea Alleged

SK3012014389 Seoul THE KOREA TIMES
in English 30 Dec 89 p 4

[Text] Tel Aviv (AP)—Syria is believed to be seeking North Korea's help in acquiring new surface-to-surface

missiles after U.S. pressure was brought to bear on China to cancel a reported deal, Israeli military sources said Friday.

The sources also said North Korea and Egypt have begun a project to develop missiles patterned after Soviet-designed Scud missiles.

The revelation by the sources, who briefed a reporter on condition of anonymity, comes at a time of mounting concern in Israel about an intensified missile race in the Middle East.

Fears intensified following Iraq's Dec. 7 launching of the Abed, a 48-ton, three-stage ballistic missile that Baghdad claimed was capable of putting satellites into space.

North Korea has a well-developed arms industry, and the Israeli sources said it had supplied Iran with Soviet-designed Scud surface-to-surface missiles during the Persian Gulf War with Iraq.

The military sources said part of the Egyptian-North Korean missile project was being developed in Egypt.

Aharon Levran, a retired brigadier general who is a leading independent military analyst, said Egypt had an arsenal of aging Scud missiles provided by the Soviet Union and had apparently turned to North Korea last year for help in modernizing them.

"It's not known exactly what sort of help the North Koreans can provide, whether it is just to renew the old Soviet missiles and provide spare parts or maybe install improved components such as guidance," he said.

He also said published reports indicated North Korea was helping Iran develop its own surface-to-surface missile and was training pilots for the Tehran regime.

The Scud-B, which has a range of just 300 km and poor accuracy, was introduced into the Middle East in the early 1970s.

General Assesses Israeli Missile

900A0096A London AL-DUSTUR in Arabic
23 Oct 89 p 6

[Article: "Israeli Warning to Egyptian-Libyan Rap-prochement"]

[Excerpts] Prior to the statement on the official meeting in Marsa Matruh, the Egyptian border city, between President Muhammad Husni Mubarak and Libyan President Mu'ammar al-Qadhafi, staff Major General Husam Suwaylim, Egyptian military advisor, expressed to AL-DUSTUR his belief that the missile Israel launched about 2 weeks ago 400 kms away from Banghazi was meant as a warning to Egyptian-Libyan rapprochement and a message that Israel is capable of reaching deep into Libya.

In his statement to AL-DUSTUR, staff Maj. Gen. Suwaylim said that the missile is an upgraded version of

the "Jericho" missile family which Israel began in 1978 south of Crete Island and upgraded to the 1,450-km range "Jericho-3" missile against which the Soviet Union submitted a protest and a warning to Israel because of its capability to reach the southern Soviet republics.

Maj. Gen. Suwaylim added: "Following the launch of the Israeli satellite last year, there was evidence that it was produced by Israel because these kinds of satellites are only launched by highly effective and very powerful missiles. This confirms Israel's intention to invade space and use nuclear warhead missiles alongside its planes that carry nuclear weapons." Maj. Gen. Suwaylim believes that Israel has been disturbed by the Egyptian-Libyan rapprochement in the wake of the recent modifications to the Libyan political directions, for it is afraid of Egyptian troop withdrawals from Egypt's western borders and their concentration along the occupied Palestine borders. It is forever intent on keeping these troops far away from it and, therefore, normalization of Egyptian-Libyan relations, which entails troop withdrawals, is contrary to Israeli strategic objectives."

On the other hand, a recent report put out by the Egyptian Military Research Center said that Israel is in the forefront of countries that have surface-to-surface ballistic missiles and that it has actually succeeded in producing the 1,450-km range "Jericho-3" missile which it launched in the Mediterranean close to the Libyan coastline. [passage omitted]

The report attributed the factors that helped the spread of such missiles in the region to the aggravated conflicts, regional threats, and failure by the parties to the conflict to resolve the situation, thus calling for the need to stockpile deterrent weapons, to drain the counterforces, and to embark on research in some countries to upgrade and modify their parts. This is coupled with the fact that most countries in the area cannot own an effective air force able to face foreign threats due to superpower restrictions on selling modern airplanes to the countries of the region.

The report identified the perils of Israel possessing modern, highly effective types of weapons in increased tensions in the area, imposition of power and dominion, continual Israeli aggressions against and threat to Arab countries, shifts in strategic and military balance in Israel's favor, not to mention the possibility of equipping these missiles with nuclear warheads. This is particularly the case given the fact that it is capable of producing chemical weapons. In addition are the perils of Israel equipping them with nuclear capabilities, in view of the fact that military scientific reports have established that Israel has a formidable nuclear deterrent force.

Paper Warns Israel Against Reacting to Iraqi Missile Launch

*NC2512123989 Cairo MENA in Arabic 2230 GMT
24 Dec 89*

[Text] Cairo, 24 Dec (MENA)—AL-AHRAM warns Israel against taking any illegitimate action against Iraq as a result of its success in launching a missile that can carry satellites into space. The paper advises Israel to keep its concern over the launching of this missile within legitimate boundaries. It indicates that any new Israeli adventure could upset the tendencies toward peace in the area.

In Monday's commentary, the paper says that if the Iraqi missile aroused Israel's anxiety, the recent Israeli missile aroused the entire region. The paper stresses that it is important for both parties to keep their anxiety within legitimate boundaries, since it is a mutual anxiety and constitutes a kind of balance.

AL-AHRAM adds that there are Israeli forebodings that could arouse fears of this anxiety exceeding what is logical.

The paper points in this respect to Israeli Defense Minister Yitzhaq Rabin's response to Knesset questions in which he said: "Israel must make an appropriate decision regarding the Iraqi development."

The paper notes that this statement is open to interpretation. Ostensibly, it could denote the need to prepare for confronting any Iraqi progress in this regard by similar or superior progress; inherently, it could mean taking real measures to check this progress. Naturally, this last assumption is substantiated by the precedent of Israel's destroying the Iraqi nuclear reactor in 1981.

AL-AHRAM notes that Israel's erroneous interpretation of the launching of the Iraqi missile increases the need to be cautious about Israel's hidden intentions because it views Israel as "conditioned for military use" on the grounds that the missile appeared immediately after the Iraq-Iran war. This indicates that the missile's manufacture began and developed during the war so that it might be added to the array of missiles actually used in the war.

The paper concludes its commentary by saying that these interpretations could be Israel's excuse for a new adventure that would turn the trends of peace topsy-turvy in the region. Therefore, this necessitates caution.

Mubarak Addresses Missiles in Interview With Qatari Papers

*NC2712174889 Cairo MENA in Arabic 1345 GMT
27 Dec 89*

[Excerpts] Cairo, 27 Dec (MENA)—[Passage omitted] In an interview with the Qatari papers AL-RAYAH and AL-SHARQ, President Mubarak said: The Qatari people are a fraternal people. We are bound together by the

strongest and oldest ties, particularly with the amir of Qatar, a wise man whom I respect as a brother and as a friend. [passage omitted]

The president then dealt with reports about Egyptian-Argentinian-Iraqi cooperation in the field of missile manufacturing. He said that this is a very old story. He denied reports that the United States had intervened to prevent Egypt from working on such projects. He stressed that there is no intervention in Egyptian decisions because Egypt is an independent and sovereign state. He added: Egypt benefits from U.S. aid, but it makes its own decisions. However, if the United States is talking about missiles in the region in general, then this is something else. He went on to say: If there is a U.S. threat to Iraq because of the al-'Abid missile, then the threat should be made to Israel too. He added: If we are talking about missiles, and nuclear weapons too, then this should apply to everyone and not only to Iraq. If they want one party to stop, then all must do so and no country should be allowed to have what another country cannot. [passage omitted]

INDIA

U.S. Accused of Contributing to Proliferation

51500052 *New Delhi PATRIOT in English*
17 Nov 89 p 4

[Article by Cecil Victor: "Missiles: U.S. To Control S. Asia"]

[Text] Not unexpectedly, the U.S. has refused to take action against Israel or Saudi Arabia for the long-range missile systems they have acquired. Therein lies an indicator of the drift of U.S. policy vis-a-vis India, Pakistan and China on the one hand and the Arab world on the other—the wide arc across the Arabian Sea.

With this breach of the self-serving Missile Technology Control Regime, the implications for nuclear non-proliferation are equally bleak. The discriminatory nature of the one is going to accentuate all the disabilities of the latter, making the world the more dangerous because U.S. surrogates uninhibited as they already are will soon enough marry their missiles with nuclear warheads as Israel has already done.

In fact it is by the process of exemplary escalation that Pakistan with its nuclear weapons ambition unfettered has moved into high gear in missile development. The underlying logic is that if the U.S. could not or did not clamp down on Israel and prevent the deployment of the Jericho II nuclear-capable missile even after such authentic revelations of Tel Aviv's nuclear arsenal as made by Vananu the Dimona facility employee, then Washington would to nothing that would undercut another strategic ally.

The logical direction of the U.S. dual-track policy of providing massive doses of conventional weaponry to its partners in a given strategic environment even as they

pursue independent missile and nuclear weapons capabilities is that these recipient countries will soon have both a bloated conventional arsenal and effective nuclear weapons. Indications that this was deliberate U.S. policy notwithstanding its protestations about both missile and nuclear arms proliferation were clear when it did nothing (and in fact encouraged it) when Israel began its collaboration with the racist regime of South Africa in the development of its own missile system even while there was room for suspicion that the latter had conducted a nuclear weapons test in the Kalahari desert as discovered by the Vaga satellite.

In fact intertwining linkages are the basic characteristic of the several politico-military arrangements of which the U.S. is the main promoter. Thus the West Asian strategic consensus ensures a pre-eminent position for Israel which has both missile and nuclear warhead. China, a partner in the South Asian strategic consensus, provides missile and nuclear warhead technology to Pakistan and is also a supplier of medium-range missiles (CSS-2) to Saudi Arabia which is an important link in the U.S. CENTCOM rapid deployment system.

The interlinkages are seen in Washington to be advantageous in creating powerful surrogates in the different regions. In West Asia Israel is central to the U.S. scheme of peace in the region. Others like Saudi Arabia and Egypt have been assigned roles by which they use their burgeoning arms industries as focal logistics bases for specific tasks as both these countries have played in the Iran-Iraq conflict and the Afghanistan war. Saudi Arabia has done yeoman service further afield—in Nicaragua—where it helped finance the Contra rebels as part of the Iranscam organised by Oliver North under the Reagan regime. All this is part of the moulding of regional perceptions as the U.S. would want it and the underpinning of this policy is arms supplies or weapons production understandings which are usually diametrically opposite the public diplomatic postures the U.S. takes on non-proliferation.

The Government of India appears to have been hypnotised by U.S. assurances that nuclear non-proliferation is state policy; that the massive infusions of conventional weaponry are meant to prevent Pakistan from going nuclear. The truth is different.

Given that both Egypt and Saudi Arabia have been thoroughly suborned in relation to the enduring Arab cause namely the Palestine issue, there is little likelihood of either or both these countries taking up arms against the paramount regional power in the region, Israel, to settle issues. Thus long-range missiles, the latest Abrams tanks, the development and production of new missiles through sub-rosa arrangements with the missile-technology producing nations, etc. can have only one outlet: a projection of power and influence eastwards into the Arabian Sea littoral including, of course, the Gulf. This would best be done in conjunction with the U.S. rapid deployment force.

On the other shore of the Arabian Sea, the U.S.-Pak-China strategic consensus is developing on much the same lines with somewhat similar asymmetries provided by China though proximity and shared borders (albeit illegal) make it a more potent connection for Beijing. Unlike as in the case of Saudi Arabia where the sudden appearance of Chinese-made CSS-2 missiles has created an unexpected asymmetry within the U.S.-Saudi bilateral nexus, the U.S.-Pak-China consensus gains greater dimension when Washington is willing to enter into arms development and production arrangements jointly with Pakistan and China.

The rationale for the simultaneous boost to conventional and nuclear weaponry in Pakistan is to give greater leverage to Islamabad vis-a-vis India which suits both Washington and Beijing. From China's point of view a well-bolstered Pakistan can ensure the continuation of the geo-strategic status quo of which Kashmir is the fulcrum. Any change there would also end the strategic link which allows Beijing to indulge in influence-peddling in Iran and Saudi Arabia and into the Gulf.

Kashmir is central to the strategies of both the U.S. and China and it is not for nothing that Washington should have sought the de jure partition of the State as quid pro quo for its assistance to India after the Chinese aggression of 1962. Later, in 1971, it sought assurances from India that it would not try to liberate Kashmir along with Bangladesh because that would have put paid to its strategy of bolstering Pakistan as an outpost against the Soviet Union.

It was to ensure that nothing happens to Kashmir that the late Zulfikar Ali Bhutto set about laying the foundation of the nuclear weapons capability which is today close to fruition. General Ziaul Haq, on his part, set about perfecting a delivery vehicle to which Ms Benazir Bhutto is heir. The successive military aid packages were stated to be to dissuade Pakistan from going nuclear. The reality is that the clandestine programme has received blessings from successive U.S. Presidents who were fully aware that the theft of nuclear blueprints from Holland by Pakistan's leading scientists, the purchase of krypton triggers, maraging steel and other instrumentation could only lead to bomb-grade fuel production. Their certification that Pakistan does not possess the bomb (even Bush has done it) was meant to deflect criticism at U.S. perfidy. However, the Israeli case has blown the cover and Pakistan has a strong precedent to follow.

Both Israel and Pakistan have built their nuclear industry through the flourishing nuclear blackmarket. Diverted fuel and components have helped. Israel's supplies are believed to have come out of the leaks from U.S. nuclear plants where accounting procedures have been vague if not lax. There has been suspicion for some time that the first Pakistani nuclear weapon may well be a Hydrogen Bomb because it was believed that it had managed to acquire Tritium gas, the catalyst that puts the bang in the bomb. Recent reports confirm that enough of the gas had vanished in transit between the

U.S. Savannah River nuclear plant and Britain to enable someone on the nuclear threshold like Pakistan and South Africa (also Brazil) to take the plunge.

Scientists Develop Agni Missile Technology

BK2512092489 *Delhi Domestic Service in English*
0830 GMT 25 Dec 89

[Text] The Indian defense scientists have developed a new technology that helps fabricate the country's recently tested intermediate-range ballistic missile, Agni. The new technology has been developed for the first time in the country with an indigenous design at the Defense Research Development Laboratory. The technology will meet the requirements of the country's aerospace industry for composite materials, providing stringent thermal, mechanical, and sectional features.

Missile, Nuclear Programs To Be Continued

BK2912035889 *Delhi Domestic Service in English*
0240 GMT 29 Dec 89

[Excerpts] All files relating to the Bofors gun deal will be placed in the Lok Sabha today. This was announced by the prime minister, Mr. Vishwanath Pratap Singh, in the house last night while replying to the two-day discussion on the motion of thanks to the president for his address to both houses of Parliament. [passage omitted]

During his over-100-minute reply, Mr. Singh covered various issues, most of which were raised by Mr Rajiv Gandhi and his party colleagues during the debate. The prime minister announced that there will be a long-term integrated defense strategy taking into consideration India's foreign policy, the internal security situation, and financial aspects. The country's missile plan will go ahead, but the nuclear program will be confined to peaceful use. However, Mr. Singh stated that if Pakistan goes in for nuclear weapons, India's policy will be given a second look. [passage omitted]

IRAQ

Further Reportage on Rocket, Missile Technology

'Not Meant for Aggression'

JN2012201189 *Baghdad INA in Arabic* 1245 GMT
20 Dec 89

[Excerpts] Baghdad, 20 Dec (INA)—Culture and Information Minister Latif Nusayyif Jasim deputized today for His Excellency President Saddam Husayn in opening the four-day meeting of the pan Arab seminar on confronting anti-Arab machinations, sponsored by the Iraqi History-Writing Organization. Jasim, representative of the president, delivered an inaugural speech in which he conveyed the greetings of his excellency the president to the Arab nation's thinkers and historians. [passage omitted]

Jasim said: It is a fortunate coincidence you came to your country, victorious Iraq, which has scored numerous victories, thanks to the leadership of His Excellency President Saddam Husayn. Iraq has tapped the most sophisticated gates of technology since it began production of the al-Husayn and al-'Abbas interceptor missiles, and the airborne warning and control system 'Adnan 1, not to mention the successful test launch of the 2,000 km-range al-'Abid satellite-carrier rocket system and the Tammuz 1 missile. While doing this, we also are striving to enlighten man intellectually and culturally and to imbue him with a knowledge of civilization. We also are endeavoring to enlighten him about the dangers of indoctrination. We have gained access to the most sophisticated, complex scientific developments and scored a formidable success, God be praised, regarding this.

The minister added: This excellence is an asset to the Arabs and Muslims, since our acquisition of these formidably sophisticated technological and military capabilities is not meant for aggression and threats. We have acquired these capabilities to safeguard the dignity of this nation and preserve its image as a nation cherishing tolerance, generosity, magnanimity, and human interaction. We also devised these capabilities to keep the torch of pan-Arabism glowing in the world. [passage omitted]

The inaugural session was attended by Defense Minister Staff General 'Abd-al-Jabbar Shanshal, the under secretary of the Ministry of Culture and Information, the heads of the Arab delegations participating in the seminar meetings, and a number of representatives of diplomatic missions accredited in Baghdad.

Ambassador on Program's Secrecy

*JN1612182689 Paris Radio Monte Carlo in Arabic
1700 GMT 16 Dec 89*

[Text] Iraqi Ambassador to Kuwait Ya'qub Yusuf stated during a news conference that Iraq is capable of protecting its space installations and deterring external aggression. He said Iraq for several years kept secret its installations and program to develop the al-'Abid rocket, despite active U.S. and European spy satellites. Iraq can protect its installations with its own defensive means, which developed greatly during the war, the ambassador said.

Envoy Describes System

*AB2012191389 Dakar PANA in English 1735 GMT
20 Dec 89*

[Text] Harare, 20 Dec (ZIANA/PANA)—Iraq has developed a 48-tonne rocket capable of putting a satellite into orbit and successfully tested it earlier in December.

Iraq ambassador to Zimbabwe, Issam Mahboub, told ZIANA [ZIMBABWE INTER-AFRICAN NEWS AGENCY], in Harare Wednesday that the rocket would be used "solely for peaceful purposes" and had nothing to do with a ground-to-ground missile which his country

had also developed. Then 25 metre-long rocket has three stages and was launched on 5 December from Al-Anbar base in Baghdad.

"We successfully achieved a complicated scientific phase on December 5, when we successfully tested the launching of a three-stage rocket to outer space from the Al-Anbar base for outer space research."

"The rocket was built solely by Iraq know-how and hands, without any foreign assistance," he said.

Building the rocket was only the first phase of Iraq's three-stage space programme, the ambassador added. He said Iraq had also developed a surface-to-surface missile with ranges of up to 2000 kilometres.

The successful launch of the rocket meant that the Iraqi Government had now gone through the most difficult, complicated and important stage of the development and production of two different missiles, he said.

Mubarak Congratulates Saddam

*JN1912144289 Baghdad INA in Arabic 0950 GMT
19 Dec 89*

[Text] Baghdad, 19 Dec (INA)—President Saddam Husayn this morning received a telephone call from his brother Muhammad Husni Mubarak, president of the Arab Republic of Egypt, congratulating his excellency on Iraq's scientific achievement in inventing rockets that can put satellites into orbit.

President Saddam thanked his brother President Muhammad Husni Mubarak on the congratulations, declaring any scientific achievement by an Arab country is intended for all Arabs and in the Arabs' service. He also asserted the fraternal relations between Egypt and Iraq will place this scientific achievement at the service of the two fraternal peoples, not just the Iraqis.

AL-QADISIYYAH Report

*JN3012115289 Baghdad INA in Arabic 0920 GMT
30 Dec 89*

[Text] Baghdad, 30 Dec (INA)—The newspaper AL-QADISIYYAH has said Iraq's launch of the al-'Abid missile system and the Tammuz 1 rocket has rendered impotent all superficial and malevolent calculations of the enemies of Iraq and the Arab nation.

In a study published today on page three under the rubric "Celebration For Brothers and Funeral For Enemies," AL-QADISIYYAH reviews the strategic basis for Iraq's scientific achievement and says: This achievement will be a big lesson to those trying to hide the sunlight with a sieve. This achievement also is proof Iraq possesses an inexhaustible reservoir of intellect and determination, inspired by the genius of leader President Saddam Husayn.

The paper goes on to say: The developments of the war, which was crowned by a manifest Iraqi victory, have

yielded a number of scientific, engineering, and construction initiatives. Among these initiatives was the remarkable scientific achievement embodied in the production of the space missile system and the completion of its first stage, which was one of the fruits of the creative Iraqi mind.

The paper adds: This skillful scientific achievement is a natural outcome of the hard work of the Iraqi people, who fight in peacetime with the same vigor they had during the 8-year battle.

The paper asserts: Just as the construction of al-Basrah and the reconstruction of al-Faw in record time proved the Iraqi citizen—under the leadership of President Saddam Husayn—is a creative surprise in the battles of peace, war, and progress. The achievement represented by the al-'Abid rocket, while flying into space, also has carried a message of peace to the entire world.

On the strategic basis of this scientific achievement, the paper says: This major strategic event has put the Arab nation on the threshold of a new pan-Arab renaissance and opened the doors of the space age through Iraq's mastery of scientific methods and highly complex techniques for peaceful and defensive purposes. One achievement was it rendered impotent the long-range Israeli rocket's field value, because it stripped Israel of its military superiority for the sake of the Arab nation.

The paper also indicated this great achievement has made the Arabs stronger than their enemies, despite all the alliances between the United States and the enemies of the Arab nation, especially the Zionist entity.

It adds: Iraq today is among the developed industrial countries which possess highly-developed technology. This no doubt will reflect on the international weight of the Arab nation, increasing its impact on regional and international forums.

The paper mocked all futile attempts to belittle the face of pan-Arabism and capable Iraq, especially Zionism's bragging about its ability to harm this achievement, or the attempt to strike at the bases of the al-'Abid missile and other peaceful scientific construction in Iraq. The paper recalled such attempts might have been possible in the past, but today's Iraq is different. If the Zionist entity has struck at the peaceful Tammuz reactor and gotten away with it until now, it will pay double for any venture or foolish act it might perpetrate against Iraq. The paper affirmed the response will be harsh, because the Zionist entity has to pay twice—and the price will be costly.

Israel Warned Against Attacking

*JN0801110490 Baghdad INA in English 1030 GMT
8 Jan 90*

[Text] Baghdad, Jan, 8 INA—AL-THAWRAH daily of Baghdad today warned the Zionist entity against the illusion of being capable to strike any target inside Iraq same as it did in 1981.

A daily editorial titled "We Warn Against Any Attempt of Aggression on Our Installations" said that the Zionist entity should understand that what it had committed in 81 could not be possible in 1990 and that it would pay a dear price of any aggressive adventure.

The daily referred to President Saddam Husayn's clear and decisive warning to the Zionist entity against the consequence of making any aggressive attempt to strike Iraq's military or scientific installations adding that the Arabs experiences with the Zionist entity were to the effect that any aggressive act could not be carried out unless receiving the green light and encouragement from the United States.

The daily denounced the Zionist and American allegations and row towards Iraq's scientific achievement by launching a space rocket and developing Tammuz-1 missile.

It stressed that those who talk about security and stability in the world should work for achieving them everywhere and especially in our region. It added that it is a mistake to view that current international changes provide for some to use the language of threat, aggression and invasion to impose their will on the international community.

It further stressed that those are mistaken when they think that their relations with the Arab countries and their interests are secure and would go on when they ignore the will of the Arab nation and its legitimate ambitions and interests in progress and scientific development.

Statement Endorsing Nuclear Treaty Issued

*JN2312192689 Baghdad INA in Arabic
1630 GMT 23 Dec 89*

[Text] Baghdad, 23 Dec (INA)—Iraq has called on the international community to put pressure on the Zionist entity in order to force it to immediately dispose of its nuclear weapons, subject all its nuclear installations and activities in this field to comprehensive guarantees, and strive to make the Middle East free of nuclear weapons.

In a statement issued by the Foreign Ministry today on the occasion of the 20th anniversary of Iraq's endorsement of the nuclear nonproliferation treaty, Iraq has welcomed the detente in international relations and the attention paid by the concerned countries to negotiations that aim to reduce arms in all their manifestations in order to arrive at formulas and solutions that can prevent the perils of nuclear armaments and other weapons of destruction from reaching the international community.

The statement added: Motivated by its deep faith in the objectives behind the nuclear nonproliferation treaty and in accordance with its principles, Iraq believes that the most effective guarantees against the possibility of using nuclear weapons and preventing the outbreak of a

nuclear war are dismantling nuclear weapons and completely destroying them in order to establish the foundations of a new world free of the means of destruction and to establish the foundations of security and peace for humanity.

The Foreign Ministry statement indicated that, being one of the first countries to endorse the nuclear nonproliferation treaty, Iraq considers nuclear energy a scientific product that can play an important role in supporting the scientific and developmental economic and social fields, and in the service of economic and social progress and development for the various countries of the world.

Iraq recalled the Zionist entity's treacherous air aggression in June 1981 which targeted the nuclear research center designed for peaceful purposes. In UN Security Council Resolution 487 of 1981, the Council considered that aggressive act a serious threat to the principles adopted by the Nuclear Nonproliferation Treaty and a flagrant violation of the International Atomic Energy Agency principles.

In the statement, Iraq also condemned the existing cooperation between the two racist regimes; namely, the Zionist entity and South Africa, indicating that this cooperation confirms their attempts to not only foil efforts by the international community in the context of its ambitions to reduce the proliferation of nuclear weapons, but also to find new places to station nuclear weapons, so they can increase tension, peddle their attempts to possess more means of nuclear destruction, and achieve their aggressive, expansionist objectives.

PAKISTAN

Pakistan, India Reach Nonattack Agreement

Pact Signed

51004701B Karachi MORNING NEWS in English
7 Dec 89 pp 1, 8

[Text] Islamabad, Dec. 6: Pakistan and India are discussing dates for exchange of instruments of ratification of the agreement on non-attack on nuclear installations, a Foreign Ministry spokesman said here today.

The agreement was signed by Prime Minister Benazir Bhutto and the then Prime Minister Rajiv Gandhi of India during the latter's visit to Pakistan. It provides that India and Pakistan will not attack each other's nuclear installations.

Both Pakistan and India have ratified the instruments of the agreement, the spokesman said at a news briefing. The two sides are discussing the date of exchange of the instruments, he said.

The spokesman said, after the instruments are exchanged, each side will send to the other a list of its nuclear installations which are to be covered by the

agreement. The lists will include the coordinates of longitude and latitude where such installation are located. The exchange of lists will take place each year on January 1, after the instruments have been exchanged.

The spokesman was asked whether a delegation of Pakistani intellectuals is planning to visit India to discuss the nuclear question. The Foreign Office has no knowledge of this, the spokesman said.

He informed another questioner that Pakistan has received a list of alleged subversive elements from Saudi Arabia. The Saudi Government, he said, has informed the Government of Pakistan that these persons are a threat to Saudi installations in Pakistan.

The installations include the Saudi Embassy and its consulates and offices of the Saudi Arabian Airlines.

He said, the Saudi Government, from time to time, has given to the Pakistan Government names of persons who pose a threat to Saudi installations and personnel.

The list of the alleged suspects has been conveyed to Pakistani security and law enforcement agencies for investigation, he added.

The spokesman said, the Chinese Embassy in Islamabad has reported to the Foreign Office that two Chinese diplomats are missing, and it needed help to locate them. The Government is continuing efforts to locate the two diplomats, the spokesman said.

But, he said, the Government has no knowledge of four Chinese students who were also reported recently missing from Pakistan.

The spokesman told correspondent that two Soviets who had been taken prisoners in Afghanistan were released by Afghan Interim Government (A.I.G.) on November 27. The A.I.G. had expected reciprocity in the matter. It had hoped that Afghans who were captured during the fighting will also be released by the Kabul regime with the help of the Soviet good offices.

No one, however, has been released so far. Pakistan Government had used its good office with AIG to secure the release of two Soviets on humanitarian ground, and it did not expect any quid pro quo. But, the A.I.G. does expect a response based on goodwill from the other side.

The spokesman said the Prime Minister is likely to send a special envoy to Sri Lanka and other SAARC countries to finalise the question of holding the SAARC summit.

The Foreign Ministers of the SAARC nations had requested Prime Minister Benazir Bhutto, the current chairperson of the organisation, to contact other member countries to finalise the date and venue of the proposed summit.

A correspondent asked for the reason for, what he called, disproportionately high rates of telecommunications between India and Pakistan compared to Pakistan and

other SAARC countries. The spokesman said the question needs to be looked into particularly by the telecommunications authorities.

The spokesman also said he will check whether a no objection certificate is required by Pakistanis for visit to India, and what is the status of Pakistan Government including India in the list of countries to which Pakistani passport holders can travel.

Private citizens have to get India endorsed in their passports each time they wish to travel to that country.

Ratification Delayed

*BK0701092890 Karachi DAWN in English
7 Jan 90 p 1*

[From DAWN's Islamabad bureau]

[Text] Islamabad, Jan 6: Although the agreement between Pakistan and India to undertake not to attack each other's nuclear installation is said to have been concluded, its enforcement from Jan 1 this year, the target date fixed in December last year by the two Prime Ministers, has not been possible.

Prime Minister Benazir Bhutto and the then Prime Minister Rajiv Gandhi had formalised the treaty on prevention of attack on each other's nuclear installation when they had met exclusively about the time the SAARC summit was held in Islamabad. The treaty was to be ratified by the two Governments with exchange of instruments of ratification to become effective from Jan 1.

The exchange of instruments of ratification of the treaty was expected by Jan 1 but for some unspecified reasons this has not happened. Officials here, however, assure that there is no real danger to the exchange of instruments which, they emphasise, would take place soon. The delay that has occurred, it was said, was not for any reason on Pakistan's part. It is surmised that India's new Government under Prime Minister V.P. Singh may have remained preoccupied with some other more pressing State business leading to some slight delay.

SATTAR: Meanwhile, Ambassador Abdul Sattar, accompanied by a Foreign Office Director-General, left Islamabad for Lahore to catch a plane for New Delhi on Sunday. Mr. Sattar was called here from Moscow to undertake the mission to the new Indian Government as special envoy of Prime Minister Beqazir Bhutto.

Mr. Sattar is expected to deliver a personal communication from Prime Minister Benazir Bhutto to Prime Minister Singh. Officials have not elaborated on Mr. Sattar's visit to Delhi but it is supposed to be essentially exploratory in nature to evaluate the possible and likely changes in India's regional policy, particularly on the issues concerning Pakistan which have been under discussion in recent past, such as the redeployment of forces in Siachen area and India's under-construction Wular Barrage which Pakistan holds to be in contravention of the Indus Basin Treaty.

The selection of Mr. Sattar to lead the mission to Delhi, which has undergone transition from a Congress-ruled Government to a National Front coalition, supported by both left and right opposition parties, is apparently made in view of his having dealt with the relations with India.

He served as Pakistan's envoy in India for over several years towards the latter part of 1970's and, subsequently, as the Foreign Secretary when a number of issues came up for serious discussion and review in order to normalise relations between the two countries.

THE MUSLIM on Ties With India, Nuclear Issue

*BK2612110289 Islamabad THE MUSLIM
in English 7 Dec 89 p 4*

[Editorial: "India 'Bully' No More?"]

[Text] The Pakistan Foreign Office has done well to make an uncharacteristically quick response to the new Indian Prime Minister's remarks on the prickly nuclear question. Islamabad's official reaction in this case is all the more remarkable as it has been occasioned not by any formal policy statement made by Mr. V.P. Singh after assuming the office of Indian prime ministership, but by a detailed interview he gave to a Gulf-based newspaper.

The highlights of the two press briefings conducted by the official spokesman of the Foreign Office at Islamabad on Tuesday [5 December] and Wednesday in this regard incorporate two related aspects. First, a reiteration of Pakistan's proposals made from time to time to keep South Asia free of the nuclear menace and, secondly, the progress achieved so far on the bilateral Pakistan-India agreement not to attack each other's nuclear facilities, announced during the then Indian premier Mr. Rajiv Gandhi's visit to Islamabad in December 1988 to attend the summit conference of SAARC [South Asian Association for Regional Cooperation] countries.

Mr. V.P. Singh had in his press interview, while conceding that there was "no harm" in the idea of the two Prime Ministers discussing the nuclear question, maintained that since, "according to reports," Pakistan was "fairly advanced in the art of bomb-making," the initiative for the purpose should come from Islamabad. The Pakistan Foreign Office thus came out with a narration of the number of well-known proposals initiated by Islamabad to ensure non-nuclearisation of the region. The official spokesman noted correctly that it was New Delhi which had so far failed to respond to any of these moves.

If the new Indian regime's expression of desire to improve the country's relations with all its neighbours is more than just rhetoric, Mr. V.P. Singh should find it possible to make these long-standing Pakistani proposals as the beginning point for meaningful bilateral talks on the issue which he has himself described as "very vital." As it is, it is not very reassuring to note that the agreement not to attack each other's nuclear facilities may not come into force in the immediate future. That is evident in the lack of

progress achieved in the finalisation of all requisite formalities, as outlined by the official spokesman on Wednesday.

Each change of regime at New Delhi or Islamabad does provide an opportunity for the two countries to reappraise their chequered relationship. However, the difficulty for Mr. V.P. Singh in taking any bold new initiatives for improvement of India's relations with any of its estranged neighbours, could be posed by the character and composition of the fragile regime he is to preside over. Apart from the relevance of the crucial support of the Hindu revivalist Bharatiya Janata Party whose antipathy for Pakistan in particular is no secret, it is hard to foretell the extent to which Mr. Singh and his Janata Dal colleagues in government would themselves be amenable to any positive policy changes in this connection.

After all, Mr. Singh's Janata Dal and the other constituent parties in the National Front may have successfully challenged Mr. Rajiv Gandhi on charges of corruption and inefficiency, but never on the undercurrents of India's hostile posture in the neighbourhood. The new regime at Delhi may turn out to be different in many ways, but it is in the main a product of the Congress culture which is at one on national Indian priorities and goals in the global arena. Even in his first press interview, Mr. Singh did not go beyond describing as "counter-productive" the image which the country's smaller neighbours have of India as the regional bully.

IAEA Director General Blix Meets Bhutto, Khan

*BK2112160289 Islamabad Domestic Service
in Urdu 1500 GMT 21 Dec 89*

[Text] Hans Blix, the director general of the International Atomic Energy Agency [IAEA], called on the president and discussed the global energy situation. The energy requirements of developing countries, including Pakistan, were also reviewed on this occasion. The president said Pakistan is facing an immense shortage of energy and needs maximum international assistance to accelerate the pace of development.

Hans Blix also met with Prime Minister Benazir Bhutto in Islamabad today. The prime minister informed Blix that Pakistan's nuclear program is solely for peaceful purposes and that it is prepared to cooperate in efforts to check nuclear proliferation in the region, without any discrimination. She thanked the IAEA for its aid for Pakistan's peaceful nuclear program, especially for the development of the Karachi nuclear power plant.

Dr. Blix expressed satisfaction with the performance of the Karachi nuclear power plant.

Indian Cooperation Sought on Nuclear-Free Zone

*51004701A Lahore THE PAKISTAN TIMES in English
6 Dec 89 p 1*

[Text] Islamabad—Pakistan expects the new Indian government of Prime Minister V.P. Singh to cooperate in

order to keep the region free from nuclear weapons, a Foreign Ministry spokesman said Tuesday.

Concerns have been expressed in the past by both sides, India and Pakistan, over the possibility of nuclear dangers in the region, the spokesman said at a news briefing.

He was asked to comment on an interview Mr. Singh gave to Khalij Times, in which he spoke of the nuclear issues. The spokesman said "we have taken note of the interview" wherein he has talked about the need for a restraint in this field.

He said "Pakistan is participating in no nuclear race, as it neither has, nor does it want to develop nuclear weapons. However, concerns have been expressed on both sides on this subject," he added.

The spokesman listed seven proposals which Pakistan has made over the years, since 1974—when India staged a nuclear explosion—to check nuclear proliferation in the region. He said Pakistan still would like India to respond to these proposals in order to ensure that the region stays nuclear-free.

The proposals are:

- Declaring the region as a nuclear-free zone.
- A joint declaration to renounce development and preparation of nuclear weapons.
- To put all nuclear installations in India and Pakistan under inspection of Vienna-based International Atomic Energy Agency (IAEA).
- Joint Inspection by Indian and Pakistani experts of all nuclear installations in the two countries.
- Simultaneous signatures by India and Pakistan on the Nuclear Non-Proliferation Treaty (NPT).
- Convening of a regional conference on non-proliferation.
- Renunciation of nuclear testing—or signing of a nuclear test ban treaty.

Replying to questions, the spokesman said India has replied to none of the proposals so far. Pakistan, he said, would like India to discuss these proposals with Islamabad. The spokesman was asked whether the nuclear question was discussed by Prime Minister Benazir Bhutto and former Indian Prime Minister Rajiv Gandhi when he visited Pakistan in December, 1988, and July, 1989.

He said the question did come up, but he could not say whether the subject was discussed in a great detail. The two sides did conclude the agreement on non-attack on each other's nuclear installations, he added.

There is a difference of approach between the two countries on the nuclear question. India, he said, would like to see the nuclear-weapon state first to destroy their nuclear arsenals and only then try to persuade non-nuclear nations.

Pakistan, on the other hand, has taken the position that the destruction of all nuclear weapons by the nuclear states will take a long time. Islamabad is of the view, that

in the short run, the smaller countries should adopt a regional approach to prevent nuclear proliferation.

Pakistan, he said, also has its suspicions regarding the Indian nuclear programme. Such suspicions should be put to rest in order to tackle the nuclear question in its proper perspective.

He told a correspondent that the two sides have yet to exchange lists of their nuclear installations which will be covered by the agreement on non-attack on nuclear installations.

SYRIA

North Korean Missile Aid Reportedly Sought

SK3012232889 Seoul Domestic Service in Korean
2200 GMT 29 Dec 89

[Report by AP and YONHAP from Tel Aviv]

[Text] Israeli military sources reported that Syria, bowing to U.S. pressure, recently canceled a plan to buy

ground-to-ground missiles which it had negotiated with China. Instead, Syria is requesting North Korea help buy and produce this missile.

Reserve Brigadier General Aharon Levran, who is a well-known Israeli civilian military expert, says that in connection with this, Syria will be interested in North Korean help, if North Korea can improve the range of the Scud missile and its accuracy. Thus, Levran acknowledged the possibility of cooperation between North Korea and Syria.

In addition, he said it is clear that Egypt asked North Korea's help last year, because its Scud missiles made by Soviet Union were antiquated.

He also cited a news report hinting at North Korea's helping Iran to develop surface-to-surface missiles and to train Iranian air force pilots as evidence of North Korea's assistance to Syria and Egypt in developing weapons [as heard].

TASS Views Bush Comments on Arms Reductions

*LD1912210989 Moscow TASS in English 2031 GMT
19 Dec 89*

[Article by TASS military writer Vladimir Chernyshev]

[Text] Moscow December 19 TASS—In an interview with correspondents of Western news agencies, U.S. President George Bush said that the United States is determined to advance conventional arms reductions in Europe. He also expressed the hope that a treaty on U.S. and Soviet strategic offensive arms will be signed at the Soviet-American summit next year.

The U.S. President's stand encourages optimism about the process of disarmament becoming permanent and stability and mutual confidence strengthening.

The U.S. President also stated that, like Mikhail Gorbachev, he will press for arrangements on a broad range of arms control issues.

However, the range addressed by the U.S. Administration is not very broad, and in this sense Washington clearly lags behind Moscow and the demands of reality.

It is, certainly, a welcome fact that strategic offensive arms, conventional armaments in Europe and chemical weapons are on the U.S. agenda.

As regards nuclear weapons, the Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles has been concluded and is being successfully implemented. A treaty on 50 per cent cuts in strategic offensive arms is about to be concluded. But tactical nuclear weapons have not yet been included in negotiations.

Is it justifiable to leave them aside, as a conclusion of the agreement on conventional armaments in Europe draws near?

Another Soviet proposal concerning nuclear disarmament has also not received the U.S. support: the proposal to conduct negotiations to terminate the production of fissionable materials used to manufacture of nuclear weapons. At present there are favourable conditions for achieving such an arrangement.

The U.S. Administration has not responded positively to the Soviet call. Moreover, it is advancing a large-scale programme to create a new technological basis for the manufacture of fissionable materials.

Naval forces play an ever more important role in the strategic balance between the Soviet Union and the United States, between the Warsaw Treaty Organisation and NATO.

The Soviet Union is pressing to open an international dialogue on scaling down military confrontation on the high seas. The USSR has made a number of proposals to start a discussion of naval topics in order to achieve practical realisable arrangements.

These efforts have failed to achieve results, mainly because the U.S. does not want to conduct any negotiations on the subject.

Washington officials are clearly inconsistent about another important issue.

Representatives of U.S. leaders talk a lot about the menace to universal peace posed by regional conflicts.

Meanwhile, the U.S. is not striving to use every opportunity to neutralise this menace.

Nothing is being done to place reliable barriers to the spread of nuclear weapons.

It is time to discuss the spread of missiles to zones of enhanced confrontation on bilateral and multilateral levels.

The Soviet Union holds that there is every opportunity to stop unlimited and uncontrolled arms supplies.

This problem, just as any other, can best be solved in the atmosphere of openness.

For this purpose, the Soviet Union expressed the readiness to participate in the creation at the United Nations of a register of arms sales and supplies. Washington has not yet advanced any proposals on this matter.

Anti-AES Campaign Issue in Chelyabinsk

*PM0712115389 Moscow IZVESTIYA in Russian
5 Dec 89 Morning Edition p 2*

[Dispatch by own correspondent G. Shcherbina: "Election Campaign Under Way: Obstacles at the Beginning of the Road"]

[Excerpt] Chelyabinsk—[passage omitted] More than 200 representatives of the People's Front, Democratic Union, and other social formations recently held their constituent meeting to form a "voters association" within Traktorzavodskiy Electoral Okrug No. 334 for the elections of USSR people's deputies. The main aim of the newly established organization is said to be to "galvanize the voters and unite them for the purpose of exercising genuine people's power." The meeting's participants rejected proposals by A. Alekseyev, People's Front coordinator, to incorporate in the statute the requirement to support the deputies of an inter-regional deputy group and campaign for radical economic reform with a multiplicity of forms of ownership, including private ownership. But even more symptomatic is the fact that an amendment to the statute of the "voters association" on supporting "progressive CPSU forces" in the elections was rejected equally vigorously. This means that the voice of Communists who took part in the meeting, including G. Sachko, secretary of Chelyabinsk's Tsentralnyy Rayon party committee, went unheeded.

Will the main bulk of the electorate respond to the program of activity of this informal organization and to

its appeals? Will they support them? Certainly not in everything, but in matters concerned with construction at the Southern Urals nuclear power station [AES] they probably will. The fact of the matter is that the population, which still remembers the terrible, devastating nuclear explosion in 1957 at one of the local defense installations, the "Mayak" combine, continues to stubbornly oppose the creation of another—as they see it—source of a nuclear threat. No one has been able to persuade them of the reverse in the last 18 months—not even the recent scientific and practical (?) conference in Chelyabinsk, although its work was broadcast on oblast television from start to finish.

The main mistake made by the conference was that its participants were unable to give distinct, convincing answers to the majority of citizens' questions, which had been published in the newspaper *VECHERNIY CHELYABINSK* beforehand. People were also mistrustful of the conference because about 80 percent of its participants were representatives of the AES project and the "Mayak" combine, and therefore defending departmental interests. This means that, willingly or no, the problem of building the Southern Urals AES is becoming one of the dominant features of the election campaign.

This is closely followed by difficulties in the oblast's provision with foodstuffs, a shortage of consumer goods, and disorder in the services sphere. It is not hard to guess how the future candidate deputies of local soviets are going to feel in this difficult atmosphere when facing the electorate. But more than 13,000 deputies must be elected to soviets of all levels in the oblast and are fated to be the force capable of resolving the tasks of perestroika in practice. This means that steps must be taken now to shape in voters an aware rather than emotional attitude to the nomination of candidates and the ability to critically assess their programs and look ahead.

It is precisely these tasks on which the electoral commissions, and particularly the party organizations, will have to focus their efforts. The activity of the latter in the initial stage of the election campaign has been analyzed by the oblast party committee bureau. It was forced to admit that many party committees have adopted a wait-and-see attitude, and that their voice is not being heard among the electorate. The oblast electoral commission and rayon and city soviet executive committees are still largely concerned with organizational and technical matters and are neglecting mass explanatory work. [passage omitted]

PRAVDA Views Middle East 'Missile Race'

*PM2212151389 Moscow PRAVDA in Russian
20 Dec 89 Second Edition p 5*

[Own correspondent V. Belyakov dispatch: "After the Event: 'Missile Race'"]

[Text] Cairo, December—Another state—Iraq—has taken a step in the development of space rocket technology. A

three-stage ballistic missile was launched 5 December from the al-Anbar Space Research Center to the west of Baghdad.

The missile can put artificial satellites into orbit. The intention is to launch a satellite bought abroad. It will most likely be manufactured at Brazilian Orbita Space Systems' plants and equipped with French photographic apparatus. Intensive talks have been under way between the sides over the last few months on this subject. In the future the Iraqis themselves will be able to make satellites at the research center equipped by the same company.

Reporting on the Iraqi-Brazilian talks, a recent edition of London's well-informed journal *MIDDLE EAST* pointed out that "although they are being conducted by civilian departments and companies, there is no doubt as to the military significance of a satellite for Iraq." This conclusion is justified by the fact that powerful photographic apparatus may be used not only for economic but also for intelligence purposes, and Iraq has many enemies—primarily neighboring Iran, with whom it has been at war for 8 years and with whom a peace treaty has not as yet been concluded. And Israel, which bombed the Iraqi nuclear center in 1981.

Israel was the first Near East state to launch its own "Ofeq-1" satellite last September. This aroused disquiet in the Arab world. Speeches by politicians and the press called for an Arab satellite to be developed in retaliation. What most concerned the Arabs was the emergence in Israel of a rocket which can not only put satellites into space orbit but also carry nuclear weapons. A lot has been said of late about Israel's ability to produce nuclear weapons—moreover, virtually all the experts are convinced that such weapons already exist.

It is now Israel's turn to be jumpy. The Egyptian press reports that an official Israeli spokesman expressed concern over the launch of the Iraqi missile since, according to him, it may carry warheads with nuclear, chemical, or biological weapons.

In addition to Israel and Iraq, at least another three Near East states—Egypt, Syria, and Saudi Arabia—have rockets, albeit not such powerful ones. While two acute conflicts—Arab-Israeli and Iran-Iraq—have not yet been settled in this region.

The well-known Israeli thesis about "defensible borders," which is used to justify territorial seizures, is not working as missile weapons spread in the Near East. No border, even the most "natural," can be fully defended any more by purely military means. This border can only be made secure by political means, by its neighbors acknowledging it, and by a peace settlement.

U.S.-USSR Discuss Missile Proliferation

*LD2112235289 Moscow TASS International Service
in Russian 1655 GMT 21 Dec 89*

[Text] Paris, 21 Dec (TASS)—On 18 and 19 December, routine rounds of the Soviet-U.S. consultations on the nonproliferation of chemical weapons and on the nonproliferation of missiles and missile technology were held. The Soviet delegation was headed by V.P. Karpov, USSR Deputy Foreign Minister, and E. Verville.

EUROPEAN AFFAIRS

Progress Achieved in JET Fusion Project

90AN0055A Brussels EUROPE in English
9 Nov 89 p 15

[Report: "Research—Thermonuclear Fusion Factor Is Improved Thanks to the 'JET' Project"]

[Text] Brussels, 8 November (EU)—Over the past twelve months, the JET [Joint European Torus] project, which brings together in a laboratory near Oxford researchers from the Community, Sweden, and Switzerland, has more than doubled its best thermonuclear factor. With this result, the JET researchers have achieved the essential aim of the project, i.e. being able to prove the scientific feasibility of nuclear fusion as an energy source. According to Dr Paul-Henri Rebut, the director of the programme, problems of the heating and confinement of a thermonuclear plasma are now solved. The JET experts are now due to concentrate their efforts on the reduction of impurities and the control of fuel alimentation for a long enough time for a future fusion reactor.

The JET installation is not a reactor which can produce energy, but an experimental machine. For the following phase, which will allow for the generation of electricity via thermonuclear fusion, based on a European project or broader international cooperation, a larger machine will be needed in order to demonstrate the "ignition" at the power level required for a reactor, i.e. several gigawatts. (Ignition is now less than a factor of ten away.)

In order to provide the essential data on the control of impurities for a next-step machine, possibly by 1994, an extension of the current JET programme will be proposed.

AUSTRIA

Radiation Protection Accord Signed With Poland

AU1812154589 Vienna WIENER ZEITUNG
in German 17 Dec 89 p 2

[Text] Austria has signed an agreement on the exchange of information and cooperation in the sphere of nuclear safety and radiation protection. The agreement is designed to protect the Austrian population from the dangers posed by nuclear plants in the neighboring countries.

To achieve this goal, similar agreements have been concluded with the CSSR, the GDR, and Hungary, and another treaty with the Soviet Union is to be ratified shortly.

According to Article 2 of the agreement, annual consultations are planned in all spheres of peaceful nuclear energy use, particularly nuclear safety. In this connection, every side should provide information on its

nuclear plants, including waste disposal plants. In accordance with the two conventions drafted in 1986 within the framework of the International Atomic Energy Agency authority, the agreement provides for the immediate notification of a nuclear accident or of the occurrence of unusually high radioactivity values (Article 3), and contains the intention of both parties to provide mutual assistance in cases of need (Article 4).

Cooperation between the two countries in the field of science and technology, as stipulated in Article 5, forms the basis for cooperation between individual Austrian and Polish institutions.

Poland currently has no nuclear power plants—the construction of reactor blocks type Voronezh VVER 440 was suspended some time ago—for which reason, questions of nuclear safety refer to research reactors, the application of isotopes, and the disposal of radioactive wastes.

CANADA

AECB Approves Startup Testing of Darlington Plant

51200004 Ottawa THE OTTAWA CITIZEN in English
2 Nov 89 p A14

[Text] The Atomic Energy Control Board has approved start-up testing of the Darlington nuclear power plant.

The board Wednesday overruled objections from the town of Newcastle, where the \$12.5-billion nuclear facility is located.

William Morison, Ontario Hydro's vice-president for design and construction, said the first reactor at the plant near Oshawa will be started at 1 per cent of power within a few days.

If all goes well the reactor will be at full power by January, said Morison. "It's very important to us and the people of Ontario to get Darlington running this winter."

When complete in 1992, the plant will be able to generate 3,600 megawatts of electricity, enough to serve a city the size of Toronto.

Spokesmen for the town of Newcastle said during argument before the board that there is no adequate plan to deal with potential emergencies, including fires, at the plant.

"There is no emergency plan, there are only guidelines," said Larry Kotseff, the town's chief administrative officer.

Newcastle had also requested a health study of area residents so that it would be possible to detect any health effects, such as higher rates of cancer or birth defects, that might arise from radiation.

Ontario Hydro staff said there is enough health data already available to monitor any problems that could develop.

Darlington Plant Operating License Denied

51200006 Toronto *THE GLOBE AND MAIL* in English 8 Dec 89 p A11

[Article by Linda McQuaig]

[Text] For the second time this fall, Canada's nuclear regulatory agency has turned down a request from Ontario Hydro for a licence to begin operating the Darlington nuclear power plant.

Citing safety concerns, the Atomic Energy Control Board [AECB] ruled yesterday that it would not allow Hydro to proceed from the testing stage in the power production stage at the Darlington plant, located just east of Toronto.

On a separate issue, the board threatened to take further action if Hydro did not bring Darlington into compliance with provincial laws governing fire and building regulations.

In a strongly-worded statement, the board warned Hydro that it could resort to using a section of the Atomic Energy Control Regulations that allows the board, among other options, to revoke licenses already granted.

Hydro currently has a licence, obtained from the AECB last month, to test the Darlington reactor. This time, Hydro was trying to obtain a licence to begin operating the plant.

The board said that, once the safety issues are resolved, it would meet again at short notice to reconsider Hydro's request for an operating licence.

Both the AECB's technical staff and the town of Newcastle, where the \$12-billion nuclear plant is located, opposed Hydro's application at a fractious AECB meeting yesterday in Ottawa.

The licence rejection by the AECB comes at a time when Hydro has been warning the public that there could be power shortages this winter.

Lawrence Kotseff, administrator for the town of Newcastle, said yesterday that he suspected Hydro's warnings about power shortages may have been connected to its licence application for Darlington.

"If they can demonstrate there is a power shortage, they can put pressure on the AECB to give them their (licence)," he said.

Newcastle opposed Hydro's application on the grounds that the Darlington plant does not comply with provincial laws governing fire regulations and building codes.

Citing Newcastle's concerns, the AECB noted "with considerable disappointment and regret" that Hydro was

still not in compliance with provincial laws—a precondition for granting it a licence to operate.

"The board now insists that these instances of non-compliance be rectified forthwith and points out that if such compliance is not forthcoming soon, it will become necessary for the board to consider taking steps, including action under section 27 of the Atomic Energy Control Regulations."

That section allows the board to suspend, revoke or amend a licence.

The board also cited safety issues, such as the need for additional safety equipment at the nuclear plant.

In a statement released yesterday evening, Hydro senior vice-president Arvo Niitenberg said that the additional safety equipment would be installed within the next two weeks.

However, he was less conciliatory on the issue of complying with provincial laws, which has been the source of the bitter battle between Hydro and Newcastle.

Mr Niitenberg's statement repeated Hydro's position that Darlington already has an adequate fire safety plan, which has been approved by the fire marshal's office in the Ministry of the Solicitor General.

The town of Newcastle has argued that provincial laws require that the fire plan be approved by the local fire chief. Newcastle fire chief Michael Creighton has said that the existing plan is not adequate, in that it fails to deal with the potential hazards of a fire in a nuclear facility.

FEDERAL REPUBLIC OF GERMANY

Talks With East Bloc on Reactor Safety Planned

AU2812162489 Frankfurt/Main *FRANKFURTER ALLGEMEINE* in German 27 Dec 89 p 11

[Report by K.B.]

[Excerpt] Bonn, 26 December—Immediately at the beginning of the new year FRG Environment Minister Klaus Toepfer and the nuclear energy industry will continue their negotiations with the GDR and East European states on the details of how the safety of the reactors, which are already operating or are under construction there, can be permanently improved. When asked about this by *FRANKFURTER ALLGEMEINE*, Toepfer stated that close, plant-specific cooperation based on the already existing skeleton agreements has been agreed upon for next year. Now it is necessary to come up with technical measures—based on the exchange of experiences with the GDR and East European states—with which reactor safety can be developed further. Toepfer does not use the term "reequipment" of nuclear power plants. This is a joint task, the Power Plant Union (KWU), which belongs to the Siemens Company, says. The first orders have already been given.

The reactor safety of nuclear power plants in central and Eastern Europe, Toepfer affirms, is of common interest. The security interest of the FRG commands it to help in raising the plants to a higher level of safety as quickly as possible, Otto Count Lambsdorff, chairman of the Free Democratic Party, says. This must also be accompanied by financial support. The current negotiations on reequipment in terms of safety technology is not a purely commercial process, Siemens-KWU says. This reequipment is of mutual interest. [passage omitted]

SPAIN

Future of Vandellos I Discussed

Design Flaws

90WP0018A Madrid *EL INDEPENDIENTE* in Spanish
25 Nov 89 p 27

[Report by Angel Munoz and Joan Turro]

[Text] Madrid/Barcelona—The Vandellos I nuclear power plant has design flaws that make it less safe, acknowledges the final report of the Nuclear Safety Council (CSN) on the serious accident at the atomic plant last 19 October. The CSN sent the report yesterday to all appropriate institutions. It describes the incident and the flaws that were detected in complying with existing legislation on what to do when an accident occurs at a nuclear facility. The CSN reports major design flaws in Vandellos I, which went on line in February 1972, noting that the proprietary companies did not make all of the modifications that the CSN had requested in 1986 after it detected six flaws that affect the degree of safety at the plant in the event of an accident.

The CSN is preparing a second official report in which it will order Vandellos I to make a series of modifications that will determine the nuclear plant's future, inasmuch as they will be very costly, and if the atomic station ceases to be profitable, it will be closed down.

Demonstration in Barcelona

A demonstration is set for noon tomorrow, Sunday, in Barcelona to call for the immediate shutdown of Vandellos I and a near-term timetable for the closure of the other nuclear plants in Catalonia. Taking part will be 53 groups and political parties, including the IC [Initiative for Catalonia], Els Verds-Lista Verda, the ERC [Republican Left of Catalonia], and the PCC [Communist Party of Catalonia], plus the unions CCOO [Workers Commissions], UGT [General Union of Workers], the Pagesos Union, and USTEC [expansion unknown], in addition to various organizations such as Justicia i Pau and Crida a la Solidaritat, a variety of civic associations, environmental groups, and nonparliamentary parties, and, of course, the Antinuclear Coordinating Board of L'Ametlla de Mar.

The banner that will head up the march, which will proceed from Gracia Boulevard at Provenza Street to Urquinaona Square, will be carried by residents of L'Ametlla de Mar. Some 800 have signed up and will travel to Barcelona in buses chartered by the town government.

Although a recent Socialist proposal to shut down Vandellos I was passed unanimously by the Parliament of Catalonia, the two largest parties, CiU [Convergence and Union] and the PSC [Socialist Party of Catalonia]-PSOE, are not supporting the demonstration. According to the spokesmen of the organizations that called the march, the reason is that they are waiting for the Nuclear Safety Council's report; they therefore believe that a resolute response from citizens is important so that there are no doubts about the will of the people in calling for the shutdown of Vandellos I.

Separately, Ramon Espasa, the assistant spokesman of the United Left-Initiative for Catalonia parliamentary group, has sent an urgent appeal to the government asking it to take a stand on the massive grassroots call for the closure of Vandellos I. Espasa indicated that it would be interesting to see whether all of the parliamentary groups remain consistent with the votes that they cast in the Catalan Parliament.

Cost Factor

90WP0018B Madrid *DIARIO 16* in Spanish
28 Nov 89 p 6

[Report by Alberto Valverde]

[Text] Madrid—The Ministry of Industry and Energy could permanently shut down the Vandellos I nuclear power plant if the cost of introducing the safety measures ordered by the Nuclear Safety Council exceeds 20 billion pesetas, which is how much the Spanish proprietary companies have left to amortize on their initial investment.

The Industry Ministry yesterday decided to suspend temporarily "the third condition in the permanent operating permit" for Vandellos I, which will force the electric-power facility to remain in a "secure shutdown" for an undetermined period of time until new official instructions are forthcoming.

The ministry also began new proceedings against the power plant's top management in light of the responsibility that the Nuclear Safety Council attributed to them in the accident there on 19 October.

In an official note couched in deliberately cautious legal language, the Industry Ministry accepted, almost word for word, point number two in the resolutions of the CSN plenary session last Thursday. The resolutions specifically recommend that the Industry Ministry replace the permanent operating permit that was granted to Vandellos I a year and a half ago with a provisional permit that calls for new power output conditions. As *DIARIO 16* predicted last week, both the CSN and the

Industry Ministry are thus avoiding taking a stand on the permanent shutdown of the power plant, which a plenary session of the Catalan Parliament called for 2 weeks ago.

Given the provisional nature of the CSN report and the absence, for the time being, of instructions to the Industry Ministry on the future operation of the nuclear plant (they will presumably come with the final CSN report in 2 or 3 months), the ministry is thus avoiding addressing head-on the controversial issue of the nuclear plant's industrial future, which will depend on the circumstances that exist when the CSN files its final report on the accident.

Economic Cost

Nevertheless, reliable ministerial sources have told this paper that "the final decision on Vandellos I will depend largely on the economic cost of the safety measures that will be needed to operate the plant again and on whether it will be lower than the cost of the definitive amortization of the plant."

As of 1 January 1990 around 28 billion pesetas will remain to be amortized on Vandellos I, out of a gross initial investment of 98 billion pesetas, according to estimates based on the calculations of the fixed-asset value of nuclear power plants as published by the Industry Ministry in the Official State Gazette for rate-setting purposes.

Only 21 billion pesetas of the balance is owed by the proprietary Spanish electric-power companies that are in the Hifrensa consortium. They are the ENDESA [National Electric Power Enterprise, Inc]-ENHER [Ribogorza National Hydroelectric Enterprise] public group and the private firms FECSA [Fuerzas Electricas de Cataluna, S.A.] and Hidruna. The remaining 25 percent is owed by Electricite de France.

Unofficial sources reported that in light of the preliminary CSN report the permanent shutdown of Vandellos I has been ruled out for now, inasmuch as it is not mentioned in any of the report's conclusions or in the resolutions of the CSN plenary session last 23 November. Despite the lack of a specific recommendation, however, the Industry Ministry could shut down the plant permanently (which would necessitate its amortization, with the resulting impact on electricity rates) if the cost of the safety measures exceeds some 20 billion pesetas.

Hifrensa sources indicated, however, that the cost of implementing the safety recommendations proposed by the CSN is very difficult to pinpoint at this juncture. As of yesterday neither Hifrensa nor the associated enterprises had received a copy of the CSN report, and even the news that the "third condition in the operating permit" had been suspended came only by telephone, at least as of mid-afternoon.

Secure Shutdown

The same sources indicated that in their judgment the nuclear power plant ought to remain in a secure shutdown for a minimum of 18 and a maximum of 24 months in order to carry out the safety recommendations that the CSN made 3 years ago after the Chernobyl accident. Nonetheless, they added, we will have to wait 2 or 3 months to find out "under what conditions our authority to operate will be renewed, because the economic cost of the safety measures will ultimately depend on them."

The fact that this is in an interim government seems to have been a decisive factor in the provisional decision by the current heads of the Industry Ministry to place the plant in a secure shutdown. With yesterday's exclusively provisional decision they have put off a final one for a few months, until the new government is formed.

Reliable sources indicated yesterday that the French Government, which is a strong advocate of nuclear power (the basic technology at Vandellos I is French), has exerted all of its influence to prevent Madrid from making a "drastic" decision on the power plant's future. At present seven power plants that are twins of Vandellos I are operating in France, and thus its shutdown would create a dangerous precedent in Europe, which now relies heavily on nuclear power.

Similar suggestions have also reportedly been received from the International Energy Agency (AIE), given the significance, though not extreme gravity, of the accident at the Spanish power plant, at which there was neither a release of radioactive gases nor a core meltdown. At its most recent ministerial meeting in Paris, chaired by Spain's industry minister, Claudio Aranzadi, the AIE issued a press release in which it resolutely advocated the peaceful use of nuclear power to generate electricity, under appropriate safety conditions of course.

[Box, p 6]

Little Effect on Rates

Madrid—The decision to place Vandellos I in a secure shutdown for an undetermined period will have no effect on electricity rates, official Industry Ministry sources stated yesterday.

The statement is only half true, however, as there will be an impact, albeit a minimal one, on the costs of generating electric power, and therefore, in accordance with a strict application of the "stable framework" regulating electricity rates, there should also be an impact on these rates.

The minister of industry himself, Claudio Aranzadi, put the cost of shutting down the power plant or amortizing it in advance at one percent. So far this has not happened, though the energy produced at this plant (one of the least expensive, excluding hydroelectric power) will have to be made up with power from other alternative

sources. The so-called differential cost of these two forms of energy is put at 3 pesetas per kilowatt replaced.

[Box, p 6]

Mayors Satisfied

Tarragona—The mayors of the towns in the Vandellos I area (L'Ametlla de Mar, Tivissa, Pratdip, Montroig, and Vandellos-Hospitalet) approve of the report that the CSN has issued recommending the shutdown of the nuclear power plant in light of the gravity of the accident there on 19 October.

Nevertheless, the mayor of Vandellos, Carlos Barcelo, while describing the report as very positive, complained that it created uncertainty about the plant's future. "We have always said that we would abide by the report of the Nuclear Safety Council. The thing is that we would prefer a definitive solution to the problem, and if the plant has to be shut down, let's shut it down once and for all, and if it's going to continue operating, let's say so from the start. Postponing a final decision gives the impression of indecision about what the solution ought to be," he said.

For their part, neither Hifrensa (Hispano-francesa de Energia Nuclear, S.A.) nor the shop committee has seen fit to take a stand. Sources close to the enterprise have merely noted that the CSN report is very harsh in its judgment of the enterprise's actions on the night of the accident.

The mayors of Montroig, L'Ametlla de Mar, Pratdip, and Tivissa, who have taken a more radical stand than the mayor of Vandellos, feel that the CSN report has shown that they were in the right with their denunciations of how serious the accident was. "My opinion on the basis of this report is that we have been deceived like a Third World country. The gravity of the accident has now been made obvious, even though the civil governor told us mayors of towns in the plant area that nothing was wrong that night. This is something that can never be allowed to happen in this country," noted the mayor of Montrgoi, Josep Maria Aragones.

Furthermore, the World Information Service on Energy (WISE) has asked the Industry and Energy Ministry to immediately shut down the Asco I, Asco II, and Vandellos II nuclear power plants because Catalonia does not have a fire department that can cope with an accident inside a nuclear facility.

The environmental organization WISE bases its request on the order that the chief of the Generalitat's fire department gave his men, to the effect that they not fight fires in nuclear power plants as long as they do not have protective gear to guarantee their physical integrity.

Emergency Plans

90WP0018C Madrid *EL INDEPENDIENTE* in Spanish 28 Nov 89 p 26

[Report by Angel Munoz]

[Text] Madrid—"The power plant had planned a manual release of carbon dioxide through the reactor-vessel pressurizer-discharge line if the pressure continued to rise." This piece of information, which appears in the preliminary report of the Nuclear Safety Council on the accident at Vandellos I, clearly shows that the residents of nearby towns should have been evacuated, in the midst of an election campaign. Not only could the reactor at the atomic complex have melted down because of failures in the cooling systems, but the management of the plant had also planned to release highly radioactive gases to relieve the mounting pressure in the reactor.

If the Emergency Room (SALEM) of the CSN had known from the beginning about everything that was going on at the plant, it would have had to declare a category four emergency, which under Civil Defense's Basic Plan for Nuclear Emergencies calls for "the general evacuation of the population" in civilian and military vehicles.

The CSN asserts in its report that "if during the early hours of the incident it had had precise knowledge of the situation, the council would have asked the civil governor of Tarragona to declare, on a precautionary basis, a category 1 emergency and to control accesses." The CSN does not say what it would have recommended subsequently in light of the chilling information that should have reached the SALEM. Experts in radioactive contamination who were consulted feel, however, that the category 1 emergency would have quickly developed into a category 3 or 4. Category 3 entails "control of accesses, confinement of individuals in buildings, radiological preventive measures, personal protection, and the evacuation of critical groups (pregnant women and children), as well as the control of food and water and the stabling of animals."

If accurate information about the accident had reached the SALEM in timely fashion, these measures would surely have had to be taken, inasmuch as it could not have waited for radioactivity to be released before evacuating the population, especially the critical groups.

Tarragona Nuclear Emergency Plan (PENTA)

On the night of the accident the Tarragona Nuclear Emergency Plan was activated in category 1, pre-emergency situation 0. This is done "when the incident is such that there is no reasonable expectation of releases from the plant and measures to protect the population are not necessary," to quote the exact words in the PENTA.

In situation 1, which the SALEM would have recommended "on a precautionary basis" to the Civil Government of Tarragona, "the incident is such that releases of

radioactivity, even under adverse circumstances, do not result in doses that exceed the lower level of intervention, and the adoption of measures to protect the population is not justifiable, even though control of accesses is to be recommended to prevent other kinds of risks" such as panic flight by the population owing to the nuclear emergency.

The data released in the report have led the experts consulted to conclude that the "precautionary" declaration would have been replaced by a category 3 or 4 declaration if the management at the power plant had not concealed information and if such information had been reported at once, as the Nuclear Emergency Plan provides.

Not only were plant technicians planning to release radioactivity to alleviate pressure in the core before the relief valves opened automatically, but for 15 hours they were also cooling the reactor manually with the few cooling components available. The decision to release radioactivity would have been correct, because if the safety valves had opened automatically owing to the rising pressure, they could not have been closed since the compressed-air system to shut them would have been inoperative.

A release of radioactivity was not only to be expected if the core was melting but was also called for in the plant manager's plan of action to prevent more serious problems.

Release Into Atmosphere

The release of carbon dioxide from the core into the atmosphere would have most certainly contaminated an area within a radius of 2 kilometers, inasmuch as there was only a slight breeze that night. Along with the carbon dioxide, which cools the reactor, all sorts of radioactive isotopes would have been released into the atmosphere. One is carbon 14, which has a very long half-life and is readily assimilated by plants, thus entering the food chain; it emits gamma radiation. Another substance that would most certainly have been released is iodine 131, which is very dangerous and accumulates in the thyroid. The Nuclear Emergency Plan provides for the distribution of iodide tablets to protect the thyroid. Still another is strontium 90, which emits beta radiation and, upon entering the human body, lodges in the bones. Inert gases, which irradiate the lungs when inhaled, would also have been released. Finally, cesium 137, emitting gamma radiation, directly affects the entire body.

The force with which the carbon dioxide would have been released could have also swept up traces of plutonium and uranium, especially if the cladding around the nuclear fuel had cracked. These are the most dangerous elements if they come into contact with the human body.

If a category 3 or 4 emergency had been declared, the shortcomings of the PENTA would have been clearly revealed. There are bridges that a bus cannot cross; the

loudspeaker systems cannot be heard by the entire population, and there are serious deficiencies in the communications networks. Moreover, the person in charge of PENTA, the civil governor of Tarragona, closed the Operations Coordination Center (CECOP) at 0300 hours; PENTA was thus left without its head, who decided to go to the nuclear power plant.

[Box, p 26]

Criminal Negligence, Says AEDENAT

Madrid—The actions of the management of the Vandellós I nuclear power plant during the accident on 19 October could be described as constituting criminal negligence, sources at AEDENAT-FOE [Environmental Association for the Protection of Nature] have asserted. Accordingly, the association is looking into filing a criminal suit against the proprietary firm, Hispano Francesa de Electricidad, and the manager of the plant, Mr Fernandez Palomero.

According to the environmentalists, the new information furnished in the CSN report on the accident shows unequivocally that there were delays in providing information to the CSN and the Civil Government; that pertinent data were concealed during the accident, and that the Interior Emergency Plan was not activated. "Independently of the administrative liabilities that may apply, these actions could constitute criminal negligence, which would have endangered the safety of the workers at the plant and thousands of people living in the area."

As far as AEDENAT-FOE is concerned, the CSN report "clearly proves that there was a radioactive leak, inasmuch as the sea water that flooded the power plant came into contact with the radioactive water from the pool in which the spent fuel elements are stored."

In addition, the environmental organization feels that the CSN has still not clarified "why the modifications that it ordered in 1986 and that in the judgment of the council itself would have rendered the accident less serious, were not made." AEDENAT adds that the CSN should have demanded that the improvements be made, inasmuch as that is one of its responsibilities, and "it can even shut down any installation."

[Box, p 26]

Phone Calls From the Plant Were Not Recorded

Madrid—Another factor that will prevent an accurate assessment of the accident is the fact that the lines of communication between the CSN Emergency Room and the power plant suffered from failures that night, the CSN report emphasizes.

The Emergency Room, which is located in Madrid, has a series of "point to point" lines to the various nuclear power plants so that it can tape-record conversations during any incidents that take place and avoid possible interference over the telephone network.

Nevertheless, on the night of the accident "owing to the poor quality of reception over the point to point line to Vandellos," the regular telephone system had to be used, and thus "most of the conversations with the plant were not recorded."

As a result, it will be hard for both the political authorities (government, Congress of Deputies) and the judiciary to determine definitive responsibilities.

Plutonium Factory

90WP0018D Madrid EL INDEPENDIENTE in Spanish 28 Nov 89 p 26

[Text] Vandellos I is the only nuclear power plant in Spain capable of producing plutonium for atomic weapons. In fact, the spent fuel is sold to France, which uses this raw material to produce its nuclear weapons. Graphite-gas power plants like Vandellos I use French technology and were originally designed as plutonium factories after the Second World War. They were later converted so that they could produce electric power as well.

The spent fuel is sent by rail to France for reprocessing in the Marcoule and La Hague plants.

The fuel elements are generally stored for 150 days in the pools at the plants. The fact that France has a surplus of plutonium has caused some delays in the shipment of the spent fuel there. In 1983 cracks appeared in some of the fuel elements that were being stored temporarily in the pools. The radioactive products of nuclear fission leaked into the pool water through these cracks, raising the radioactivity to beyond the authorized level. The cracks appeared because the elements had been in storage too long.

A very serious incident that nevertheless went unnoticed took place when two fuel elements were mistakenly placed in the number 1 graphite silo on 12 and 20 November 1973. Inside the fuel elements are the natural-uranium pellets that serve as fuel and that upon leaving the reactor are full of fission products and highly radioactive transuranic elements. These elements have to be stored temporarily under water with the proper radiological safeguards. The solution that was chosen is, to say the least, debatable. The graphite silo was closed because it was felt that the search for and removal of the elements entailed a greater risk. The closure took place in April 1977. The silo is still being used today with certain precautions. The Vandellos I nuclear power plant has always been marked by irregularities and serious technical problems, yet it has never been penalized. In the judgment of AEDENAT-FOE, which has gone public with its complaints, an altogether shoddy job has been done.

France Lobbies Against Shutdown

90WP0018E Madrid DIARIO 16 in Spanish
29 Nov 89 p 15

[Report by Alberto Valverde; first paragraph is DIARIO 16 introduction]

[Text] Through the state-run firm Electricite de France, France is lobbying Spanish officialdom intensively in Madrid to keep open the Vandellos I nuclear power plant, which uses French technology. The French Government feels that the permanent shutdown of the damaged plant would establish a dangerous precedent on the continent, as it would be the first time such a decision was made in Western Europe.

Madrid—Through the state-run enterprise Electricite de France the French Government is pressing for the repair of the Vandellos I nuclear power plant, for which it supplied the basic technology.

Over the past few weeks the French public firm, which has a 25-percent share in the Hifrensa consortium, has warned of the dangers that the permanent shutdown of Vandellos poses to the future of nuclear energy in Western Europe, which is heavily dependent on this form of electric power to meet its energy needs.

According to business and political sources, Electricite de France is categorically opposed to the permanent shutdown of the only Spanish nuclear power plant that had permanent authorization to operate. The firm feels that the fire-caused accident this past 19 October at Vandellos I does not in and of itself justify as drastic a measure as the permanent closure of the facility.

Electricite de France was the firm that made possible the construction of Vandellos I, which was Spain's third nuclear power plant, coming after Garona (which is owned by the Nucleon consortium) and Jose Cabrera (belonging to Union-Fenosa).

From a technological standpoint, Vandellos I is closely tied to Electricite de France, which runs seven such facilities in France. None of them has had a serious accident in spite of their unusual technology (their cooling system uses graphite gas instead of water).

Safety Improvements

Sources close to Electricite de France have reaffirmed that the Vandellos I facility is safe and that the firm is committed to making the safety improvements that the CSN has recommended. They assert that their cost will not be excessive and will under no circumstances exceed the figures that have been bandied about in Spain as limits for making such expenditures worthwhile.

Sources close to the Hifrensa consortium, which also includes the Spanish public group Endesa-Enher, Fecsa, and Hidruna, say that from an economic standpoint "we

can proceed to make the repairs and introduce the safety improvements without the risk of making the plant uneconomical."

Although the cost of the safety measures has yet to be assessed, sources in the consortium put it at around 15 billion pesetas. This is less than the 28 billion pesetas that remain to be amortized on the original investment in the plant, which in current values comes to 98 billion pesetas.

The same sources estimate that the repair of the plant and the investment on new safety measures ought to be complemented by what in technical jargon is called the "lengthening of the useful life of the plant" in order to maximize the value of the projected investment. This has already been done at the Garona and Jose Cabrera plants, which were shut down a few years ago for this purpose.

Profitable Investment

If the Industry Ministry authorizes lengthening the life of the plant, the projected investment will be more than profitable. Vandellos has an installed capacity of 500 megawatts, and the facility's cost per kilowatt-hour is one of the lowest in the power grid. Even with the new additional expenditures the cost of its output would be far lower than at any other nuclear power plant in Spain, with the exception of the ones mentioned above.

[Box, p 15]

Hifrensa Confident of Plant's Future Operation

Madrid—In the first official reaction to the CSN report on the accident last 19 October at Vandellos I, the Hifrensa consortium yesterday expressed its conviction that the facility can resume normal operations once the recommended safety improvements have been made.

In a public message the consortium, which comprises the firms Electricite de France, Endesa-Enher, Fecsa, and Hidruna, recalls the CSN's description of the accident (a major, not serious incident) and the fact that the report itself acknowledges that the plant was not "on the verge of an uncontrolled situation in the nuclear reactor."

The note admits that plant management was remiss in the area of communication, especially in light of the delays, although it observes that the facility was brought to a "secure shutdown, without causing any radioactive contamination or injury to any individual, as the CSN acknowledges."

The consortium that owns the power plant is currently looking into the safety reassessment program so that it can proceed to make the necessary modifications, in accordance with the recommendations of the Nuclear Safety Council.

Shutdown Cost

90WP0018F Madrid *DIARIO 16 in Spanish*
30 Nov 89 p 55

[Report by Xavier Horcajo]

[Text] Barcelona—The permanent shutdown of the Vandellos I nuclear power plant would cost more than 44 billion pesetas, according to the impact estimates of the affected electric-power enterprises. The remaining amortization of the plant's book value accounts for some 21 billion pesetas of this amount, while another 21 billion would be the cost of replacing this energy source.

The affected companies would have to start up plants that burn fuel-oil or use other more expensive alternative systems; the added expense is put at more than 1.5 billion pesetas a year. Replacing the power that Vandellos I generates with an equivalent amount would cost each of the three companies (Fecsa, Enher, and Hidruna) between 500 and 600 million a year, according to sector estimates. This would mean an extra 1.5 to 1.8 billion in production costs for the Catalan electric-power companies. The firm that owns Vandellos I, Hifrensa, includes Fecsa, Hidroelectrica de Cataluna, and Enher-Endesa, each of which owns a 23 percent share.

The other two partners are the state-run French enterprise Electricite de France, which owns 25 percent, and Hidroelectrica del Segre, a Fecsa affiliate, which has 6 percent.

The Vandellos I power plant cost some 100 billion pesetas, of which 21 billion remains to be amortized, according to official data from Hifrensa, which is headed by Luis Magana, who is also the president of Fecsa.

A hypothetical shutdown of the plant would not hurt the proprietary firm's operating account, since it defrays all of its fixed costs (upkeep, organization, and personnel) under the "stable legal framework." In any event, a shutdown would require a hike in rates, which are regulated by the government.

The Official State Gazette suspended the plant's operating permit, particularly paragraph 3 (the permanent authorization), which was valid until 2003. Hifrensa sources indicate that the permit has simply been suspended until the modifications recommended by the CSN are made.

Hifrensa's permanent operating permit is the only one of its kind in Spain and was granted because the power plant recycles its fuel. The fuel from Vandellos I is shipped by train across Catalonia to France, where it is vitrified; the trip "does not entail any danger of radioactivity," according to director Fernando Roset.

Repercussions of Vandellos I Accident Reported

Influence Peddling Charged

90WP0019A Madrid EL INDEPENDIENTE in Spanish
27 Nov 89 p 24

[Article by Angel Munoz: "Make Changes and Close It Down"]

[Text] The preliminary report of the National Security Council (CSN) on the accident at the Vandellos I nuclear power plant shows that "influence peddling" is unacceptable when it comes to monitoring safety at Spain's 10 nuclear power plants. The report says that if the proprietary firms had made the necessary investments to improve safety, "the accident would have been less serious." The CSN gave such an order in 1986, but everything was the same almost 4 years later. Moreover, it was learned after the accident that the power plant has serious design problems that point up its vulnerability in the case of a conventional accident that should not have placed the plant in a "critical" situation.

The billions of pesetas that change hands in the electric-power sector and the interests that they create have given rise, in the midst of democracy, to dangerous influence-peddling that could have fatal consequences in the event of a nuclear accident. Those monitoring nuclear safety cannot work for those whom they are monitoring, which is the case with some high-level CSN officials. The Ministry of Industry and Energy, where some high-level pronuclear officials also work, has done very little so that the independent sector of the CSN, as represented by its chairman, can assert its views with the necessary weight in overseeing safety at nuclear power plants.

The government must take careful note of what happened at Vandellos, make the necessary changes in civil service, and close the nuclear power plant for good if it really coined its motto, "Spain, with progress," with the interests of the general population in mind, not just so that "progress" benefits the few. It is up to the government to make changes and close the plant.

Personnel in Jeopardy

90WP0019B Madrid EL INDEPENDIENTE in Spanish
27 Nov 89 p 24

[Article by Angel Munoz: "The Lives of Vandellos Technicians Were in Serious Danger During the Nuclear Accident"]

[Text] Madrid—Even though Vandellos I did not release radioactivity in amounts above the permissible maximums, the lives of the technicians at the power plant were in serious danger because they had to control cooling at the plant manually, as we can gather from the preliminary official report on the accident. Moreover, the unfolding of the incident shows how precarious safety at this nuclear power plant is, given the major design flaws that reduce it.

"We are in a fire situation in main group one (sic); the plant is shut down in secure reactor, with two turboblowers in service." This was the first notice that the Emergency Room (SALEM) of the CSN received, at 2111 hours last 19 October. The fire began in the second turbogenerator group at the Vandellos nuclear power plant 32 minutes before. A minute before the call to the SALEM the plant's reactor had been in its most critical condition during the accident, even though the reactor had been manually shut down at 2140 hours. The temperature and pressure in the reactor were increasing dangerously; several cooling systems had already failed; the plant building had begun to fill with water, and the firemen from Hospitalet and Vandellos II had arrived at 2200 hours, just at the most "critical" time for the nuclear reactor. This was what happened during the first few moments of the accident at Vandellos I in Tarragona, according to a detailed timetable of events compiled by the CSN in the report that has been sent to Parliament, political parties, and all the institutions involved. In 20 minutes a conventional incident had "KO'ed" most of the nuclear reactor's cooling systems. At 2139 hours there was an "alarm from abnormal vibrations in the turbine of the number two main turboalternator." The fire started 2 minutes later with "flames and several successive explosions." The power plant called the firemen from the Generalitat and nearby Vandellos II. At that very moment the technicians shut down the reactor manually, and 7 minutes after that the turboblower stopped "for lack of lubrication." In just a few minutes the flames had burned several cables that see to it that oil is supplied to this vital component of reactor cooling through the blowing in of carbon dioxide. Two minutes later, at 2149 hours, turboblower 3 "shut down owing to lack of watertightness." Now only two turboblowers were left to cool the reactor, and the rest of the auxiliary systems began to fail. Hundreds of liters of water stored at the plant itself and additional hundreds of liters of sea water began to flood into the reactor building. A pipe from the exterior cooling circuit had broken just below where the fire began. Meanwhile, the firemen were hosing down the fire a few meters above, and the tanks of demineralized water stored at the plant itself began to leak (1,500 cubic meters). Together, they formed a pool that smelled of salty sea water, demineralized water, and the firefighters' water.

Covered by Water

The water eventually covered the shaft of the two turboblowers that were cooling the reactor, and several auxiliary pumps that are vital for them to operate became practically submerged.

The water reached the spent-fuel storage ponds. The cooling pumps for these ponds became submerged, and the temperature began rising, inasmuch as the spent fuel stored there was still hot. As the official CSN report states, "the maximum level reached in the pond was 27 degrees, the normal temperature before the incident being 24.5 degrees. The maximum permissible temperature in the pond is 30 degrees, and above 32 significant

corrosion of the cladding of the fuel elements begins." If the temperature had risen five degrees more, the radioactivity that the fuel rods emit would have spread dangerously through the water where the spent fuel is stored to be cooled. The pond cooling pumps could not be replaced until the morning of the 21st.

Out of Control

The control room at the nuclear complex lost control of many of the plant's components. The technicians were receiving all of the information about what was happening from a computer, but on many occasions the controls to correct the malfunctioning components did not respond.

The fact that the controls did not work forced the technicians to operate the various components manually, as they went down to plant basements to run the systems, which with great difficulty were able to cool the reactor.

The CSN states in its report that the technicians at Vandellos I worked under "difficult and dangerous conditions caused by the dense smoke, fire, and flooding," for which reason their lives were in danger. "Because the operating personnel at Vandellos I had an in-depth knowledge of the facility, they were able to make up for certain design flaws with local manual actions." Some workmen even had to lay new cable surrounded by water, fire, and smoke to replace the burnt ones.

Thousands Demonstrate

90WP0019C Madrid EL INDEPENDIENTE in Spanish 27 Nov 89 p 24

[Article by Xavier Marti: "Thousands in Barcelona Attend Largest Antinuclear Demonstration Ever"]

[Text] "Let's Close Vandellos I." "Let's shut down nuclear plants, first Vandellos!" That was the title of the manifesto that was read yesterday at San Jaume Plaza in Barcelona, the center of Catalan politics. The streets of Barcelona, especially Pau Claris-Via Layetana Avenue, were filled with people demanding the closure of nuclear power plants. Even though it was Sunday and the leaden skies were completely overcast and even though rain fell at intervals, yesterday's was the largest antinuclear-environmentalist-peace demonstration ever in Catalonia. Estimates of the crowd vary considerable, however, depending on the source. The organizers say 100,000 attended, while the municipal police say 12,000.

The march left the intersection of Gracia Boulevard and Provenza Street at noon on the dot. Heading it up was a huge banner reading "Let's close nuclear plants, first Vandellos I," followed a short distance behind by one that said "Barcelona 92 without Vandellos I and II." There were actually a host of banners and green and orange flags, as well as handkerchiefs of those same colors and pink. To the residents of the area around the Asco and Vandellos nuclear power plants these have become symbols of their grievances.

Some 4,000 people had "come up" from Tarragona districts to Barcelona to take part in the march. The organization had requested a parking area for 50 vehicles in Ciudadel Park. Local municipal governments paid for all of the buses. As a spokesman for the antinuclear committees explained, "the people from each town who wanted to come to the demonstration signed up at their respective city hall, which then rented the buses that were needed. This alone provides a clear idea of the commitment and strength that our struggle is gaining."

Also in attendance were Rafael Ribo and Ramon Espasa, the president of the Initiative for Catalonia and a deputy from that group, respectively, as well as the new secretary general of the Republican Left of Catalonia, Angel Colom, and autonomous-community deputy and leader of the same party Josep Lluís Carod Robira. One of the slogans most often chanted by the marchers was, in fact, "PSC, Convergence, and PP [People's Party], where are they, we don't see them." Other slogans that were chanted over and over again were: "The best security, nuclear shutdown," "To hell with nuclear power, we want green earth" and "Now's the time, institutions; listen to the towns."

The shouting, whistling, jumping, and chanting kept up continuously for almost two kilometers. San Jaume Plaza, which is the epicenter of Catalan politics, was too small for the human tide that squeezed into the almost perfect square. The urban guard, which was outside city hall, and the Mossos d'Esquadra, outside the Generalitat, were the only uniformed personnel seen all morning. Jordi Pujol was called on to attend, but as almost every weekend the president was on the road inaugurating something in some district.

Separately, Jordi Bigas, a member of WISE (World Information Service on Energy), stated that "in light of the Nuclear Safety Council's report, the only thing to do is take away Vandellos I's permit."

Workers Seek Safety Guarantees

90WP0019D Madrid EL INDEPENDIENTE in Spanish 30 Nov 89 p 29

[Article by Joan Turro: "Vandellos I Workers Demand Safety"]

[Text] Tarragona—"We will fight to get maximum safety guarantees. We may demand more than the Nuclear Safety Council itself," stated two representatives of the Shop Committee at Vandellos I, adding that they were never gripped by nuclear fear during the fire and that the accident could have the positive outcome that the measures they are most interested in seeing are going to be adopted.

"We aren't nuclear power 'kamikazes.'" The words are those of Francisco Garces, and they were seconded by Antonio Rodriguez. They are both workers at Vandellos I and members of the Shop Committee and were speaking "on a strictly personal basis."

"The truth is that we were never gripped by nuclear fear, but during the initial moments the flames were very high, and at that point there was a certain degree of fear, nervousness, and concern. I too had those feelings as I headed towards Vandellos, albeit for different reasons: the reasons that have caused the people at the power plant to become fed up with being principals in the most serious nuclear accident in Spain's history.

Guinea Pigs

"The power plant had planned a manual release of carbon dioxide through the reactor-pressure relief line if the pressure kept on rising." This information appears in the preliminary report of the CSN, which EL INDEPENDIENTE has seen, but Antonio and Francisco were unaware of it. Although they do not doubt the CSN's word for a minute, they say that they thought there was no danger because things were under control. "Were we going to allow our families to run the slightest risk?" The decisions always came from "above" through the established hierarchical channels. The two hard-hats did not know that they could have breathed radioactive gas.

The fear and tension were much more intense in the Hifrensa company town in Hospitalet de l'Infant (Tarragona), where most of the families of Vandellos I workers live. The tension began when the shift that was on duty at the nuclear power plant was late in arriving home. As a result of this and a few telephone calls the people there learned of the tragic fire.

Owing to feelings of solidarity with colleagues who were in trouble and, in many cases, 20 years of devoted work in "their" company, most of the workers very soon headed off to the plant, on their own, to help put out a blaze that was later called "the most serious nuclear accident in Spain's history."

Pulling out the Hoses

The first concern of the people who were working at the power plant at the time was "to pull out the hoses." The first firemen to arrive were from Vandellos II; they also began dousing the fire with water; it was not until much later that they began to "spread foam." The arrival of more firemen and of company personnel, who were coming to help out, caused scenes that, when misinterpreted, have pained the plant's technicians. "You go out shopping and are asked whether it's true that the technicians took off running...My answer is yes, that they're still running..."

The haste of some technicians was misconstrued amid the general nervousness, as their only concern, once their spot in helping to put out the fire had been covered, was to return as fast as they could to their control posts at the nuclear plant to prevent problems in the reactor.

The technicians were aware that the important thing was to control the reactor, and that was why they were in a hurry; they were not just looking out for their own safety, as some ill-intentioned assertions would have it.

An Insane Situation

"The situation was insane; every second seemed an eternity." But the workers held out in their posts "out of conscience" even though the automatic systems started failing, as a result of which the levels of the "turboblowers" were changing constantly. "The situation was not very complicated, even though we shifted to the manual system, inasmuch as we had the experience that 19 years as workmen provides..."

Even though the automatic systems that had failed had to be replaced by humans, even though the reactor "building" was under almost a meter of water, even though the electrical system of the bailing pumps was failing and despite the dense smoke and enormous heat coming from the fire area, the workers at the nuclear power plant never thought or realized that the carbon dioxide pressure had to be relieved, with the resulting radioactive cloud.

The feeling at the power plant now is that "to a certain degree" the fire was a positive thing, not the accident itself but its consequences, in the sense that safety measures are going to be taken at nuclear power plants. "We're the first ones who want to have maximum guarantees of them; we're risking our lives and those of our families..." Moreover, they want to make their position clear, besides the fact that, for example, they have been demanding a separate fire department for the power plant since 1984. They recall that they are the only nuclear power plant workers who have gone on strike, and "we will fight to get maximum safety guarantees; we may demand more than the CSN itself..."

No One Has Informed Us

The families had the worst time of it that night. "In some homes both father and son work at the plant," and they were afraid of the injuries that could have resulted from the blaze, although the medical services did not have to apply a single band-aid. But they were not gripped by "nuclear fear." They are now assuming that Vandellos I is going to be closed for a long time, but they are not afraid, as they all have contracts with the "parent" company that guarantee their jobs. Their work life is going to remain tied to nuclear power plants, and since they do not regard themselves as nuclear "kamikazes" they are going to monitor every development so that they can thus insure their safety, although so far no one has informed the workers, who enjoy the highest wages in the district.

CSN Autonomy Claimed

90WP0019E Madrid EL INDEPENDIENTE in Spanish
30 Nov 89 p 29

[Text] Madrid—The minister of industry and energy, Claudio Aranzadi, has asserted in Malaga that the government will not take a stand on the future of the Vandellos I nuclear power plant until "the Nuclear Safety Council [CSN] has done its final report" on the

serious accident last 19 October. After indicating that "the government cannot take a stand on hypotheses," Aranzadi declined to comment on the measures that the power plant would have to take in order to be reopened and refused to voice an opinion on who was to blame for the accident. The acting minister described the CSN's efforts in the Vandellos I incident as "extraordinarily positive," and this has enabled "most Spaniards to retain confidence in it." At the same time he indicated that the council was independent "of any activity of the government."

The permanent operating permit of Vandellos I, which was granted on 29 April 1982, has been suspended by an order that the Industry and Energy Ministry published yesterday in the Official State Gazette. The suspension entails the provisional closure of the power plant, as its startup has been prohibited, and its reactor must remain in a secure shutdown.

Separately, the firemen at the Vandellos II power plant yesterday began a 1-week strike to demand higher wages. The 16 firemen at the atomic complex were the first to arrive at nearby Vandellos I on the night of the fire.

Economic, Political Interests

90WP0019F Madrid *EL INDEPENDIENTE* in Spanish
1 Dec 89 p 27

[Article by Angel Munoz: "Heavy Pressure So That Final Report on Vandellos I Allows It To Reopen"]

[Text] Madrid—Now that the preliminary report of the Nuclear Safety Council [CSN] on the Vandellos I accident has been published, the entire financial and political machine has been set in motion in an all-out attempt to have the plant reopened. In the meantime, many are starting to ask themselves why the CSN is headed by proponents of nuclear power.

There are two main reasons for reopening Vandellos I: the economic consequences for the proprietary firms, which have almost amortized the plant, and preventing a precedent that would jeopardize the other two first-generation atomic complexes, which have been in operation for 20 years now. Moreover, closing Vandellos I, which can put out 425 megawatts, could force the government to move forward its decision on lifting the nuclear moratorium on the two atomic power plants at Valdecaballeros, Badajoz, with the resulting loss of votes for the Socialist government of Rodriguez Ibarra, who has an absolute majority in Extremadura.

Acting Minister Claudio Aranzadi has assured this newspaper that the government will not make any decision in this regard until 1991, right after the autonomous-community elections. Juan Carlos Rodriguez Ibarra has often promised his voters that as long as he is president, Valdecaballeros, where construction has been halted with one-third yet to go, will not open.

Disagreements

Informed segments of the CSN are convinced that for safety reasons Vandellos I should not reopen; therefore, they feel that in order for it to start up again major reforms would be needed, which would entail a heavy financial burden for the companies. The long-standing battle in the CSN between proponents of nuclear power and independents reached its peak during the drafting of the preliminary report, under which the plant has been temporarily closed.

Until a few years ago the council was run by men backed by the electric-power companies, but with the arrival of Donato Fuejo as chairman, conflict has arisen. It is no longer as easy to do what is recommended from the outside. Luis Echavarri is the strongest proponent of nuclear power on the CSN and has fought hard to make the report less harsh than the circumstances of the serious accident would dictate. In the end, none of the five CSN members was happy with the final wording. With the drafting of the final report, which will be completed in a few weeks, the moment of truth has come, and the sectors that back each council member are moving quickly.

Although the law creating the CSN provides that it must be independent, opposition forces and environmental groups feel that such an institution cannot be headed by people who are clearly in favor of nuclear power and who thus violate the requirement of necessary CSN independence every day. For his part Donato Fuejo has stated on several occasions that he is neither for nor against nuclear power and that if the government should decide to abandon this form of energy, the CSN would work to oversee a safe dismantling.

Nevertheless, council member Luis Echavarri has publicly stated that he is in favor of lifting the nuclear moratorium. Moreover, it was he who in 1987 convinced the mayors of the towns around Vandellos II not to boycott the mock nuclear emergency that was necessary to authorize the startup of the plant. "They portrayed him to us as the man with the satchel; it was assumed that he was the one who was bringing the money to correct the shortcomings in the emergency plan," a local mayor has stated; "now we have seen that he deceived us despicably." Two years later there are still serious shortcomings in the Tarragona Nuclear Emergency Plan.

Pita's Appeal

This fact prompted United Left to call for his resignation, inasmuch as his actions violated the law creating the CSN. Echavarri has major support outside the CSN in the person of the secretary general of energy, Victor Perez Pita, another avowed proponent of nuclear power who is annoyed that Donato Fuejo heads the CSN.

Perez Pita does not want Vandellos I shut down, but the fact is that he also wants Valdecaballeros opened. The president of Extremadura told this paper that Pita called

him to sound him out about the opening of Valdecaballeros. Ibarra spoke to Gonzalez to reaffirm to him his opposition to the startup of what would be the third and fourth nuclear power plants in Extremadura. The PSOE is convinced that it would lose its absolute majority in Extremadura if Valdecaballeros were opened.

[Box, p 27]

Wolves the Day After

The accident at Vandellos I is bringing to light who really controls nuclear power in Spain, with all of the implications thereof.

When the moment of truth arrives, the hounds bare their fangs to defend their master. A nuclear power plant could have closed for good, after almost fatally contaminating an area of the country, and certain groups, some

of them in government, are thinking only about the money that will have to be spent to restart a time-bomb that almost went off.

Furthermore, after reading the preliminary report of the CSN, several mass media learned that their coverage of the accident was, in a sense, inaccurate, and thus their inability to score a news coup has pitched them into the hands of self-interested sources of information that are even claiming that the gases that were almost released from the plant's reactor were not radioactive.

No matter how many declarations of good intentions the companies that own the damaged nuclear power plant make, they clearly deserve no credibility at this point. Several times since 1986 the CSN has asked them to improve their safety conditions, even on an emergency basis, and now they will have to pay the price for their irresponsibility, for having tried to save themselves a few million pesetas in recent years and, moreover, for having concealed vital information from the CSN on the night of the accident that posed a serious threat to the reactor.

Ten Minus One Makes Nine

| Nuclear Power Plants in Service | Nuclear Power Plants Shut Down | Fuel Element Factory | Radioactive Waste Storage |
|---------------------------------|--------------------------------|----------------------|----------------------------|
| Santa Maria de Garona (Burgos) | Lemoniz (Vizcaya) | Juzbado (Salamanca) | Sierra Albarrana (Cordoba) |
| Asco I and II (Tarragona) | Trillo II (Guadalajara) | — | — |
| Vandellos I and II | Valdecaballeros (Badajoz) | — | — |
| Trillo I (Guadalajara) | — | — | — |
| Jose Cabrera (Guadalajara) | — | — | — |
| Cofrentes (Valencia) | — | — | — |
| Almaraz I and II (Caceres) | — | — | — |

Ten nuclear power plants (five of them affected by the moratorium), one radioactive-waste storage site, and a fuel-element factory have been built in Spain. The 10 atomic complexes are located in 5 provinces and account for 40 percent of Spain's electric-power output: Jose Cabrera (Zorita) in Guadalajara, built in 1969; Santa Maria de Garona in Burgos, 1971; Vandellos I in Tarragona, 1972, which has been temporarily shut down; Almaraz I and II in Caceres, 1981 and 1983 respectively; Asco I and II in Tarragona, 1983 and 1985; Cofrentes in Valencia, 1984; Vandellos II in Tarragona, 1987; and Trillo I in Guadalajara, 1988. As for the five nuclear power plants that have stopped producing under the 1983 nuclear moratorium, the acting minister of industry and energy, Claudio Aranzadi, has stated that the moratorium will not be reconsidered until 1992. The two plants that have the best chances of being completed are Valdecaballeros I and II, in Badajoz, which have 1,000 megawatts of power each. A decision in this regard had been scheduled during the review of the National Energy Plan (PEN) in 1991, but all indications are that the government will wait until after the autonomous-community elections in Extremadura are over so as not to lose its absolute majority in the region, which is headed by Juan Carlos Rodriguez Ibarra, if the decision

is yes. Nonetheless, a delay until 1992 could be a clear-cut signal of what the final decision will be.

CSN Players

90WP0019G Madrid EL INDEPENDIENTE in Spanish 1 Dec 89 p 27

[Text]

Six Names in Atomic Energy

Donato Fuejo, Chairman. The 63-year-old chairman of the Nuclear Safety Commission received his degree in medicine from the University of Seville. He joined the PSOE when Tierno Galvan's PSP [People's Socialist Party] became part of Felipe Gonzalez' party. He has no connections to the electric-power or nuclear industries. Lobbyists regard him as a stranger to their world, as the sector's "bete noire." He was a deputy in the 1977 and 1982 legislatures and a member of the WHO. Until he arrived, an independent CSN chairman was unknown in the nuclear-power sector.

Fabio Sarmiento y Redesa. The industrial engineer from the Technical School of Barcelona is 47 years old. He was

one of the architects of the nationalization of the high-tension grid, which today is in the hands of the state-run firm Redesa. He is currently thought to be close to Donato Fuejo's positions in the CSN. He has belonged to the energy group of the UGT [General Union of Workers] and before joining Redesa worked as an engineer in Hidroelectrica de Catalunia, Sperry Rand Espanola, and ENHER [Ribagorza National Hydroelectric Enterprise], a firm that ENDESA [National Electric Power Enterprise, Inc] controls. He has belonged to the ruling party for several years.

Rafael Caro, From the Big Family. The 54-year-old Caro has a PhD in physics from the Universidad Complutense. He joined the CSN with the support of Manuel Fraga's party and has backing "in the big nuclear family," in the words of the PP president. He now advises the CDS [Democratic and Social Center] on energy issues. He belongs to the pronuclear faction of the CSN and was on the former Nuclear Energy Board since 1956.

At the time the report was written, he was aligned with the softer views on the future of Vandellos I. He is currently the elected president of the European Nuclear Association.

Eduardo Gonzalez. The 41-year-old industrial engineer holds a certificate in nuclear safety and safeguard monitoring and was the first technical director appointed by the Socialist government. He has been a member and the vice president of the CSN since 1984. He will have to leave the post within a year. He comes from the nuclear-power sector, having worked for Standard Electrica and Iberduero, where he was in charge of quality from 1976 to 1983. He is pronuclear, and it was thanks to him that Luis Echavarri joined the CSN. He was the only engineer who dared to enter Lemoniz during the worst times for its construction.

Luis Echavarri, Pronuclear. The 40-year-old industrial engineer is the most aggressive proponent of nuclear power on the council, whose technical director he has been since 1985. Before that he worked for Westinghouse, which designed Spain's pressurized-water nuclear power plants. He was project director for the plants at Almaraz (Caceres), Lemoniz, and Sayago (Salamanca). The latter two were not completed for various reasons. He is at odds with Fuejo and has the support of the secretary general of energy, Victor Perez Pita. He played a major role in drafting the report.

Victor Perez Pita, Industry. The current secretary general of energy, Victor Perez Pita, will play a major role when the time comes to decide the future of nuclear power in Spain. He does not get along well with CSN chairman Donato Fuejo. He is a prominent proponent of nuclear power in the Socialist government. Before the council's preliminary report he declared that Vandellos would resume operations after the accident, thus detracting from the importance of the report. The man closest to him on the council is Echavarri. He is eager to head up

the publicly run electric-power company ENDESA, which Feliciano Fuster now runs.

SWEDEN

Government Facing Key Nuclear Energy Decisions

90WP0020A Stockholm DAGENS NYHETER in
Swedish 1 Dec 89 p 13

[Article by Ake Ekdahl]

[Text] The Swedish energy debate has been put on hold. The greatest possible silence within the Social Democratic Party [SDP] has been enjoined by the top party leadership.

Members of the Social Democratic parliamentary group feel that they are prevented from expressing themselves on the subject of nuclear power following the gag order imposed on them by party chairman Ingvar Carlsson after last fall's internal quarrel over nuclear power.

Next year Parliament will decide one of the biggest and most crucial issues affecting the future: our energy policy for the 1990's. Six major and a number of minor commissions are working on preparations for phasing out nuclear power, an operation which ideally will begin as early as 1995 or 1996 at Ringhals and Barseback.

Union Demands

The Social Democratic group for future studies foresaw difficulties in implementing the decision unless important environmental goals were abandoned. There were strong union demands to postpone the decision to phase out nuclear power and develop unspoiled rivers. With three parties in Parliament favoring a quick phase-out of nuclear power and two parties opposing it, the rift over the nuclear power issue split the SDP right down the middle.

The split was painful. The rank and file was totally irresolute concerning the party line. The party board then decided to put the lid on a venomous and dangerously heartrending debate on nuclear power.

A special emergency group consisting of the two top leaders in the LO [Swedish Federation of Trade Unions], the minister of energy, and the prime minister was appointed to take the controversial issue off the agenda. The parliamentary group was told to lie low until further notice. It was said that there had to be peace and quiet in the party and order among party members and that the debate was harmful to the party's credibility.

Issue Left out

Today no Social Democratic member of Parliament dares to speak openly about the future of nuclear power. The seminars on future issues that the party is arranging for December and January deliberately exclude energy issues from their agendas.

Despite the political silence about future energy problems, work on the nuclear program must continue. The government will soon consider two applications to build more facilities for nuclear fuel waste.

The first involves expanded interim storage for spent nuclear fuel at the CLAB [Central Storage Facility for Spent Fuel] waste facility in Oskarshamn.

The other concerns a new research lab which the Swedish Nuclear Fuel Handling Company (SKB) and the power company in Oskarshamn (the OKB [Oskarshamn Power Group, Inc.]) want to build under 500 meters of rock on ecologically sensitive Aspo Island. Interim storage is currently being handled by the Nuclear Power Safety Inspectorate (SKI). The feasibility of the underground laboratory under the terms of the Natural Resources Law is being looked into by the Ministry of Housing.

Solid Data

The government is monitoring the research which the power companies have been instructed to carry out to ensure that it is sufficiently thorough and intensive. The government wants guarantees that solid decision data will exist on the day when it has to choose one or two final storage sites for dangerous nuclear waste somewhere in Sweden.

According to the timetable the SKB has drawn up for its research program in connection with final storage, preliminary studies of three localities will be made between 1993 and 1995. The government will inspect those localities between 1995 and 1997. Detailed studies of two localities will be carried out between 1997 and 2001. Site selection will be finalized between 2002 and 2004, and the government will decide the issue in 2006. Planning and design will begin in 2007, and construction will begin sometime after 2010.

But those dates are primarily guideposts for the research work. The government has not taken a stand on that timetable. It is absolutely certain, however, that the final storage site will be selected sometime after the 1990's.

Final Storage

The storage volume being planned for a future final waste storage site is based on direct storage, although Sweden has no legal ban on the reprocessing of waste, which results in smaller but more dangerous volumes.

The entire waste handling process—involving temporary storage sites, transportation, the phasing out of nuclear power, disassembly, and final storage—is being financed by the power companies themselves through the SKB. For every kilowatt-hour delivered, a company puts from 1.7 to 2.2 ore into a fund. Last year, 1.2 billion kronor were added to that fund. Interest added another 500 million kronor, and 569 million were withdrawn for various waste treatment projects. The fund is now up to a little over 5 billion kronor.

The amount being set aside is based on 25 years of reactor operation. If the plants are shut down sooner than that, the amount going to the fund will have to be increased, resulting in higher electricity rates. The rate at which the plants will be phased out is to be debated by Parliament a year from now.

TURKEY

General Staff Worried About Syrian, Iraqi Missiles

NC1812085189 Istanbul *MILLIYET* in Turkish
13 Dec 89 p 14

[Report by Aydin Ozdalga]

[Text] While the way the honeymoon between the Warsaw Pact and NATO countries is affecting Turkey is still being debated, the general staff has given *MILLIYET* an assessment of the latest developments. Brigadier General Hursit Tolon, secretary general of the general staff, has stated that although the threat against Turkey from the north, that is, from the Soviet Union and Bulgaria, has significantly decreased, the threat from the south, that is, from Syria, Iraq, and Iran, has increased. General Tolon said that the missiles in the hands of the countries beyond Turkey's southern border, which have a range of 1,000 km, constitute a serious threat to Turkey. Turkey does not have similar missiles. Nor does it have an effective air-defense system against them.

Strategic calculations in the world were first disrupted by the INF agreement, which removed the medium-range missiles, and then by the wave of moves for freedom in the East European and Warsaw Pact countries. Turkey is one of the countries which has been most affected by these developments.

Turkey's basic defense policy is outlined in a document known as the "National and Military Strategy Concept." This document, which was drawn up by the general staff, makes an assessment of the threats which are directed against Turkey and establishes the military plans, priorities, and targets of the Turkish Armed Forces accordingly.

According to the assessments that were made over many years in the past, the most serious threat against Turkey was from the Warsaw Pact countries, the Soviet Union, and Bulgaria. The threat from Greece was next. This was due to the Cyprus problem and the Aegean dispute. The threat from Turkey's southern and southeastern neighbors, that is, Syria, Iraq, and Iran, came after all these.

To what extent have the assessments of the general staff been affected by the swift changes that have taken place during the past few months? Has there been any change in the way the threats are perceived? General Tolon's reply to this question was as follows:

"We are going through a stage in which work is being carried out on rearmament and disarmament at the same time. While the work for disarmament is aimed at maintaining security with arms which are less destructive, efforts are being made through planning to find new alternatives in order to maintain security at maximum level.

"If the disarmament process produces favorable results, then this situation will significantly reduce a potential threat, particularly from the north. Meanwhile, because of the additional capabilities that have been established in regions beyond Turkey's southern border—that is, including the missiles which have a range of more than 1,000 km—the fact that the countries which are located beyond Turkey's southern border are not participants in the process of disarmament and arms control, and the terrorist activities in the region, Turkey feels an increasing need for security in its southern sector.

"Undoubtedly, all this will significantly affect the structure, military composition, and nature and number of the Turkish Armed Forces. Work is being carried out on all this within the framework of the Turkish Armed Forces. Alternatives are being established to meet the needs of the Armed Forces at the highest level."

What is the message carried in the general staff's views? We put this question to Retired Admiral Yilmaz Usluer, who is the chief editor of the M-5 DEFENSE AND STRATEGY MAGAZINE. He replied:

"What the general staff has said is very true. The Turkish Army, which for many years prepared itself against a Soviet onslaught, has now been confronted with an increased threat from the countries beyond its southern border. This comes at a time when the Soviet threat has diminished. The most important aspect of the statement was the vexed way the general staff explained that Turkey is confronted with missiles which have a range of 1,000 km.

"Turkey may have a conflict with Syria or Iraq in the future. There will be tension with Syria because of the Kurdish Workers Party and with Syria and Iraq because of Euphrates waters. Meanwhile, Iran must be kept in mind as well. That country will support the radical theocratic activities in Turkey."

Admiral Usluer recalled that Iran has been arming itself at a rapid pace for the past few years. He said:

"Syria maintains a very strong army in order to be effective in Lebanon and compete with Israel. The Syrians have received significant support from the Soviet Union. Meanwhile, Iran and Iraq armed themselves and developed their missile technologies during the course of the Gulf war. A large part of Turkey is under threat from the missiles which are in these countries at the present time. These countries had Soviet missiles with a range of 500 km in the past. However, the general staff has disclosed that they now have missiles with a range of more than 1,000 km.

"Meanwhile, Turkey does not have an air-defense system against these missiles. Nor does it have missiles to retaliate against an attack. It had the Honest John missiles, with a range of 37 km. However, they have been dismantled. We were supposed to replace them with Lance missiles, which have a range of 120 to 470 km. However, we have not yet been able to acquire them. This is an unforgivable error. Let us not make a mistake by being carried away by the wave of peace. It is true that the possibility of a war between the military pacts is now lessening. However, ethnic and regional clashes will continue. Turkey is very close to the Middle East, in which the most intensive ethnic and regional clashes occur. In fact, the Middle East could be described as a powder keg. Attention must be focused on the views expressed by the general staff. The missile Iraq launched into space for peaceful purposes a few days ago indicates that that country has the required technology. No one should doubt that missiles for military purposes have either already been produced or are about to be produced."

Paper Comments on Syrian Missile Threat

NC0301121090 *Istanbul MILLIYET in Turkish*
27 Dec 89 p 11

[Column by Coskun Kirca: "The Question of Syria"]

[Excerpts] Turkey has a serious problem: the question of Syria. That country demands Hatay province and other parts of Turkey. Hatay province is depicted on official Syrian maps as a part of Syrian territory. The remaining Arab countries maintain a stance which is closer to Syria's position in this respect.

Syria is not satisfied with this. It supports Kurdish Workers Party [PKK] bases both on its own territory and in Lebanon, which is under Syrian occupation. Regardless of denials from Syrian officials, Turkey has sufficient evidence to confirm this state of affairs. Meanwhile, Turkey is also aware that President Hafiz al-Asad's closest associates support the PKK. [passage omitted]

Through the missiles it has acquired, which have a range of 2,000 km, Syria is now able to threaten Turkish cities and the GAP project [Southeastern Anatolia Project]. Turkey's acquisition of a similar capability is a must. If the Soviet Union would feel uneasy if Turkey tried to acquire similar missiles—from the PRC, for example—then that country should urge Syria to destroy its missiles. Convincing Syria to refrain from threatening Turkey and to agree to dismantle its missiles on a mutual basis is only possible through the acquisition of similar missiles by Turkey. Meanwhile, both Iran and Iraq have similar missiles as well. Iran's capability in this regard also poses a threat to Turkey. On the other hand, the regime in Iraq is generally friendly with Turkey. However, Iraq cannot be regarded as a country with a satisfactory level of stability. Therefore, if the United States and the Soviet Union should decide to consider the removal of such missiles from the region, then urging

them on in this regard is only possible through determined moves in the matter by Turkey.

Meanwhile, in view of Syria's hostile behavior, Turkey must look for opportunities to cooperate in the military field with Israel, which has significant disputes with Syria. Not a single sensible country in the world can refrain from seeking opportunities to cooperate with the enemies of a hostile country. If Syria does not want Turkey to seek regional alliances against it, then it should relinquish its support for the PKK against Turkey and give up its demand for land, that is, without putting forward insolent demands for other concessions.

UNITED KINGDOM

Nuclear Fuels Agency Issues Safety Report

51500047 London THE DAILY TELEGRAPH in English 1 Nov 89 p 4

[Article by Roger Highfield]

[Text] The Sellafield nuclear complex in Cumbria has 405 employees exposed to more radiation than the recommended limit, according to a report released yesterday.

The workers received doses in excess of a recommended 15 millisieverts annual limit, said British Nuclear Fuels' Annual Reports on Health and Safety and Radioactive Discharges.

In 1987, when the limit was first recommended by the National Radiological Protection Board, there were 595 workers who had received in excess of the limit.

However, nobody exceeded the statutory annual whole body dose limit of 50 millisieverts laid down by Ionising Radiations Regulations.

A spokesman for the board said he expected the recommended limit to become the statutory limit in the 1990s.

For its own workforce, BNF voluntarily applies an operational limit for radiation exposure of 30 millisieverts per person per year.

No Sellafield employee exceeded the statutory limit, although two people at the site had a confirmed exposure in excess of the company's operational limit.

Discharges of low-level liquid radioactive waste to the Irish Sea from the Sellafield nuclear reprocessing plant in Cumbria have been reduced for the eighth successive year.

The further slight reduction, after dramatic decreases in recent years, is reported in the British Nuclear Fuels' report published yesterday.

The cuts have arisen from new waste treatment plants built at Sellafield, in particular the £13 million salt evaporator and the £140 million site ion exchange plant which uses sand from the Mojave Desert in California to absorb radioactive materials.

Although fluctuations are expected to occur in future years, discharges of the most radiologically-significant radio-nuclides are expected to remain lower than those recorded before 1986.